ENGINEERING NEWS-RECORD

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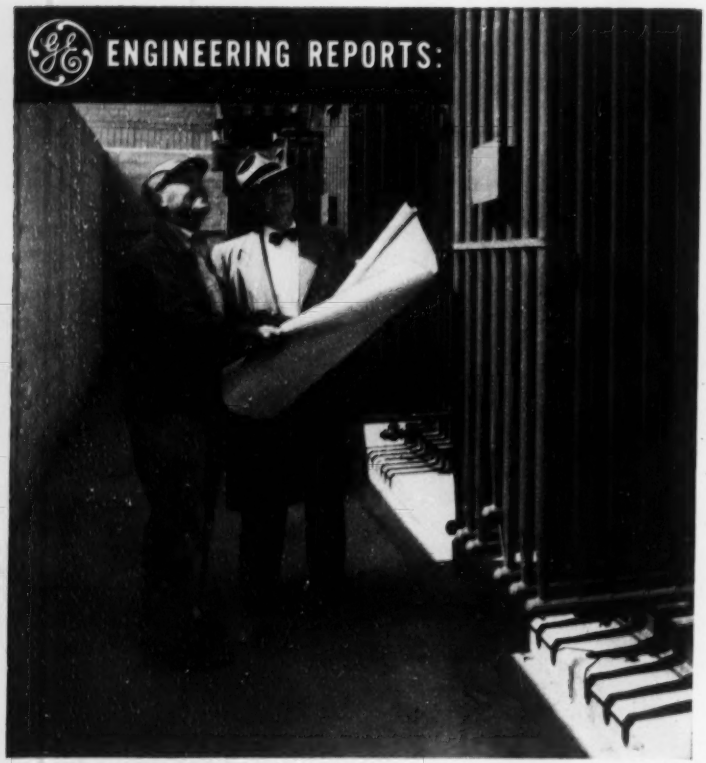
ENGINEERING REPORTS:



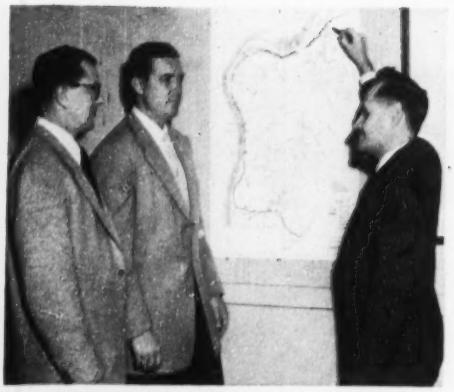
PROJECT CO-ORDINATION of electrical equipment for new pumping stations was handled by D. H. Bixby (right) of G.E.'s Louisville office, working with J. C. Jones, field supt., Central Contracting Co., and Marine Electric Co.

G-E engineering service helps speed Louisville flood control

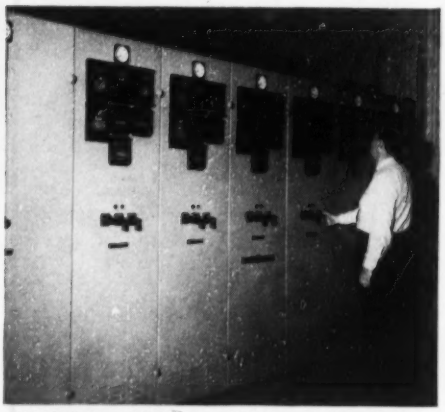
Expedites construction of 4 pumping stations by prompt delivery of all G-E equipment

In the $24,475,000 Louisville flood control project of the U.S. Army Corps of Engineers, General Electric project co-ordination service, in addition to application engineering, played an important part Through this service, all G-E power distribution equipment ordered for four of the project's pumping stations was delivered either on or ahead of schedule. This helped the electrical contractors, Marine Electric Co., and the general contractors, Central Contracting Co., to work at top efficiency, expedited construction, and earned the praise of both the Army engineers and contractors.

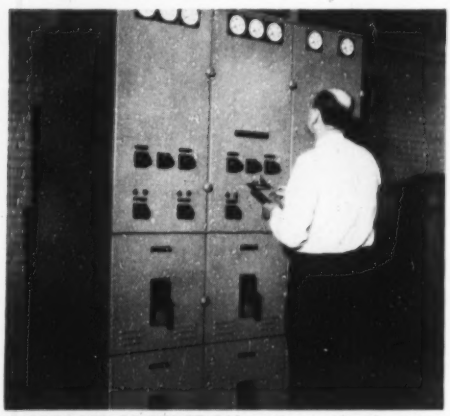
G-E equipment, backed by G-E engineering services, can pay off on *your* heavy construction projects. Learn how by contacting your nearest G-E Apparatus Sales Office. General Electric Company, Schenectady 5, New York. 664-32



ENGINEERING ASSISTANCE on the project was made available to U.S. Army engineers through F. G. Perkins (center), G-E sales engineer.



COMPLETE CONTROL of Shawnee station is provided by G-E 2400-v metal-clad switchgear consisting of 6 circuit breaker feeder sections.



INCREASED PROTECTION at the project's 34th St. pumping station is provided by 480-v G-E switchgear with 6 drawout air circuit breakers.

Engineered Electrical Systems for Heavy Construction

GENERAL ELECTRIC

Only 2 Field Joints Needed for this 42-ft Sheet Steel Culvert

Three 14-ft sections of 18-in. diameter, galvanized-sheet-steel culvert pipe can be assembled into a 42-ft culvert with only two simple field joints. And it can be done in a few minutes.

Compare this with the number of joints and man-hours required to assemble an equivalent culvert of any other material.

Further, these sections of 18-in. pipe are made of 16-gage sheet, and they weigh about 214 lbs each. This means that they can be unloaded and placed in a trench by two men without the aid of special lifting equipment.

A MORE FLEXIBLE CULVERT PIPE

Pipe made from corrugated steel sheet is strong, flexible and tough, regardless of diameter. It will conform to grade and alignment without pulling apart. It can absorb changing loads caused by shifting or freezing soil.

Bethlehem does not fabricate culvert or drainage pipe, but does manufacture the Beth-Cu-Loy galvanized corrugated and flat steel stock used by pipe fabricators. This copper-bearing steel meets Federal specifications, as well as those of the American Association of State Highway Officials.

The heavy zinc coating and the copper in Beth-Cu-Loy sheets provide a double defense against rust. Their corrosion-resistance is excellent. Pipes made of this steel can be expected to give many years of trouble-free service.

Any Bethlehem sales office will gladly furnish detailed information.

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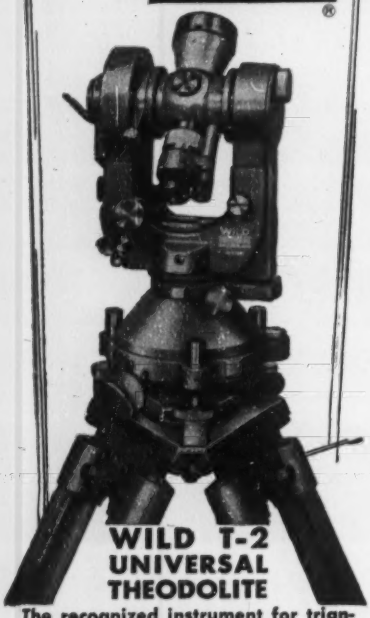

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The optical plummet makes centering above a ground point an easy and quick operation even on windy days. The telescope with its big field of view is "easy on the eye" and can be transited both ways.

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Embedded in the concrete pavement, in the base course or in the asphaltic concrete surface, Clinton Welded Wire Fabric is the steel reinforcement that literally holds the highway together. The heavy, welded wires give positive mechanical anchorage of the concrete which means better load distribution and controls cracking.

Clinton Welded Wire Fabric is available in a wide variety of gauges and spacings for all reinforcing requirements. It meets all A.S.T.M. and A.A.S.H.O specifications.

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THE COLORADO FUEL AND IRON CORPORATION • Albuquerque • Amarillo • Billings • Boise • Butte • Casper • Denver • El Paso
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This fire was finally put out—but too late to avoid heavy loss of property.

DON'T be too late! There is a moment, in every fire, when a little water will do what an engine brigade may not be able to do ten minutes later. Practically every fire can be kept from turning into a disaster, by stopping it at the start. The sure way of doing that is the *automatic* way—with a Grinnell Automatic Fire Protection System.

Grinnell Sprinklers stop fire at its source, wherever and whenever it strikes, night or day, with automatic certainty. The experience of 76 years proves this. Now, with Grinnell Automatic *Spray* Sprinklers, you get even greater protection against fire. *Less water puts out more fire.* There is a Grinnell Fire Protection System for every fire hazard, and for every type of location.

Fire strikes without warning, and it may be later than you think. Get in touch with your Grinnell engineer, and let him advise you on the particular Grinnell System to protect *your* property. Grinnell Company, Inc., 258 West Exchange Street, Providence, Rhode Island.

Here is a partial list of the different fire protection systems which Grinnell can engineer to fit your particular need . . .

- **Standard Wet-Pipe Sprinkler System.** Where temperatures remain above freezing.
- **Standard Dry-Pipe Sprinkler System.** Where temperatures may go below freezing.
- **Multitrol System.** For faster application of water in extra hazardous areas.
- **Textile Opener Room System.** For flash fires in opened cotton bales.
- **Mulsifyre System.** For fires in heavy as well as in medium oils.
- **ProtectoSpray System.** For fires in light and medium oils—many special hazards.
- **ProtectoFoam System.** For fires in gasoline and other highly flammable liquids.
- **C-O-Two System.** For highly flammable liquids in enclosed spaces.

GRINNELL PROTECTION AGAINST EVERY FIRE HAZARD

Manufacturing, Engineering, and Installation of Automatic Sprinklers Since 1878

B.F.Goodrich

All-nylon tires end tire failures for rock products company

TRACY Rock and Gravel Company trucks are scheduled to make the round trip between quarry and crusher in 8 minutes. Such close timing is necessary so that this Tracy, Calif., firm can keep its output up to the demands of the construction industry. Setting the pace is one thing, maintaining it another.

Tires broke and treads separated under 30-ton payloads. Some tires lasted only 100 hours. Valuable time was lost. Maintenance costs soared. But B. F. Goodrich *all-nylon* tires solved these serious problems, Chief Mechanic W. S. Floyd reports. After 2 years on the job, "they've never been off the rims!"

Nylon is stronger than ordinary cord materials, can withstand double the impact. *All-nylon* tires last far, far longer, put an end to premature tire failures.

Tracy uses *all-nylon* Super Traction tires because the wide tread gives greater flotation. The *all-nylon* Universal tread gives full traction in forward or reverse. And the *all-nylon* Rock Logger tire resists rock cuts.

All B. F. Goodrich Rock Logger and Universal tires (sizes 12.00 and larger) are made in *all-nylon* construction. Smaller sizes in *all-nylon* or rayon. See your B. F. Goodrich retailer today. His address is listed under Tires in the Yellow Pages of your phone book. Or write *The B. F. Goodrich Company, Tire & Equipment Division, Akron 18, Ohio.*

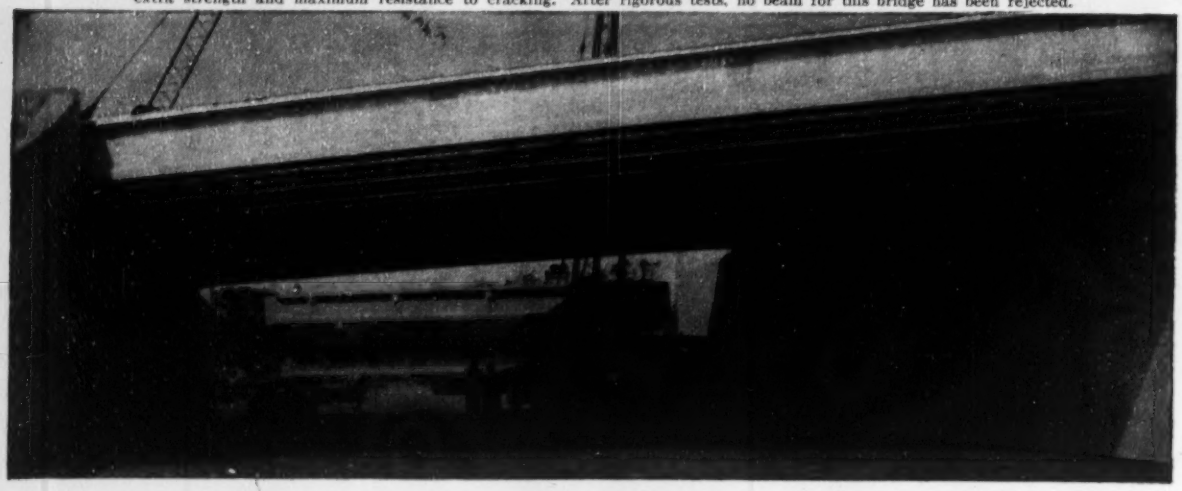
ALL-NYLON SUPER TRACTION tires pull through grueling time schedule under 41-ton gross weight.

UNIVERSAL TREAD guards against dangerous slippage, keeps trucks moving. Maintenance costs are cut.

Specify B. F. Goodrich tires when ordering new equipment

RESEARCH KEEPS
B.F.Goodrich
FIRST IN RUBBER

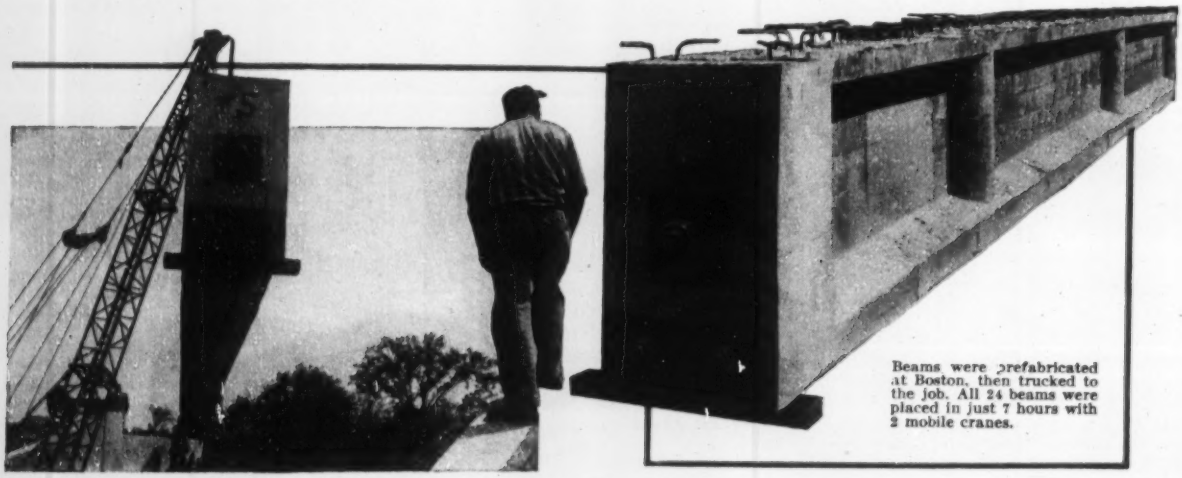
Prestressed supporting beams were specified for Scotland Road Bridge, just north of Boston, Massachusetts, to provide extra strength and maximum resistance to cracking. After rigorous tests, no beam for this bridge has been rejected.



American Special High Strength speeds construction, increases strength

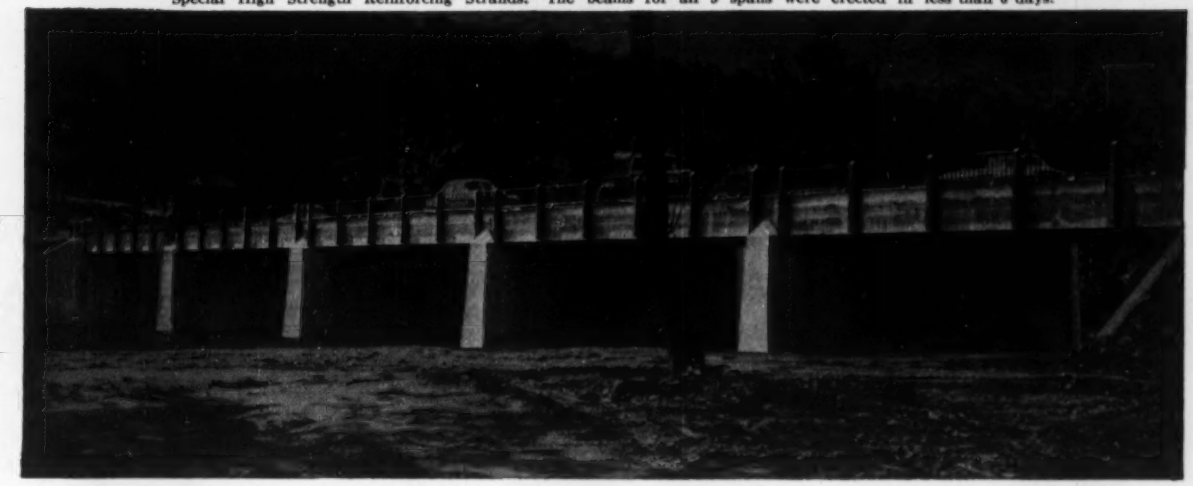
IN MASSACHUSETTS, seven important new highway bridges are being built with prestressed concrete. One of these is Scotland Road Bridge which will handle the bulk of traffic between Boston and the New Hampshire and Maine turnpikes. Extra strength and durability, as well as exceptional resistance to cracking, were built into this bridge by using prestressed concrete bridge beams reinforced by post-tensioning American High Strength Reinforcing Strand.

The slab road surface rests on 24 prestressed H-beams that were designed and manufactured by New England Concrete Pipe Corporation. Each beam is 66 ft.-4 in. long, 3 ft.-6 in. deep and 1 ft.-6 in. wide at the flanges. It contains three 1 9/16", 61-wire American Special High Strength Reinforcing Strands (not strain relieved) that are cut to length at the mill with end fittings attached and are post-tensioned to a final stress of 110,000 psi. by the manufacturer of the beam. This stress is 50% of the strand's ultimate strength . . . and more than 5 times as great as the 20,000 psi. allowed for ordinary concrete reinforcement. Post-tensioning keeps the concrete under compression, prevents destructive cracking, reduces maintenance, and increases the useful life of the concrete. The 24 beams for Scotland Road Bridge were installed in just 7 hours.



Beams were prefabricated at Boston, then trucked to the job. All 24 beams were placed in just 7 hours with 2 mobile cranes.

Each of the beams in this prestressed concrete bridge at Glen Iron, Pennsylvania contains eighty ¼-in American Special High Strength Reinforcing Strands. The beams for all 5 spans were erected in less than 6 days.



Reinforcing Strand of Prestressed concrete bridges

IN PENNSYLVANIA, more than 125 concrete highway bridges have been built with Pretensioned-Prestressed Concrete Bridge Members manufactured by Concrete Products Co. of America, Division of American Marietta Co. These extra strong bridge members all are reinforced with American Special High Strength Reinforcing Strand regular grade (not strain relieved).

The largest of these bridges, shown above, was erected in 1952 at Glen Iron, Pa. It contains 45 Pretensioned-Prestressed Members that are reinforced with ¼" diameter American Special High Strength Reinforcing Strand. Each beam is 53 ft. long, 3 ft. wide, and 33 inches deep.

These pretensioned bridge beams require only about one-fourth as much steel as conventional reinforced concrete bridge members; they resist cracking better; yet they cost about *25% less,* installed, than conventional members of equivalent strength. In tests, these pretensioned beams withstand loads 3 times greater than those required by Standard Specifications for Highway Bridges.

American Steel & Wire has been the pioneer in furnishing special reinforcing strand for pretensioning systems of prestressed concrete in both regular and strain relieved grades.

Why American Special High Strength Reinforcing Strand was chosen for these bridges

1. It has good creep resistance, as well as a high ultimate strength of 238,000-268,000 psi. depending on wire size.
2. It is flexible and easy to handle.
3. It bonds firmly with the concrete when small diameter strands are used.
4. It assures consistent results . . . is uniform in size, strength and ductility.

Write for complete information about American Special High Strength Reinforcing Strand. American Steel & Wire, Room 842, Rockefeller Building, Cleveland 13, Ohio.

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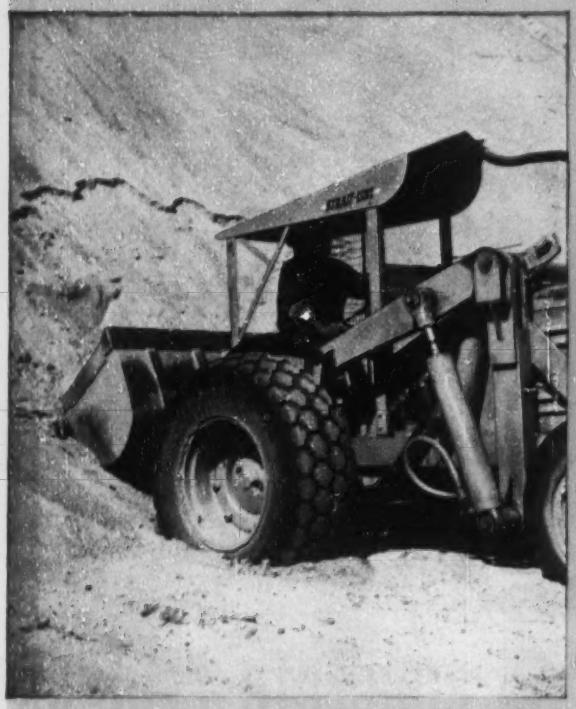
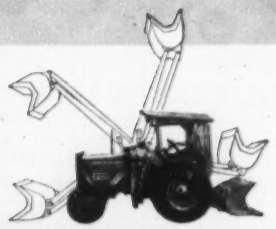


short cut to bigger profits...



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With this bulldozer attachment the Strait-Line becomes even more profitable. Rear-carried bucket adds traction that makes heavy dozing easy. Blade does not interfere with loader operation. Other attachments include lifting boom, fork, and a variety of buckets from ¾- to 2-yd. capacity.

Diesel economy and short-cycle loading—that's how the Oliver diesel tractor and Strait-Line loader short-cut to more profit on any loading job. Compare this unit with other loaders...it digs in *front* or *rear* and loads in front...always working in a straight line. The rear-carried bucket increases traction, makes steering easier and permits bigger loads.

Now add the ruggedness and economy of either the Oliver "77" or "88" diesel tractor. Here is a 6-cylinder diesel you can count on for quick starts and downright lugging ability to do more work at less cost. Get acquainted with this unit by driving it yourself. Check its features and you'll see why you get more yardage at a lower cost with an Oliver diesel and Strait-Line loader. See your Oliver Industrial Distributor.

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a complete line of industrial wheel and crawler tractors

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U. S. 4810 Air Hose

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Combining super adhesion, great strength, high resistance to cuts and abrasion, and extreme *flexibility*, U. S. 4810 is recommended for all pneumatic tools and air drills, for use *wherever* high working pressures, abrasion, and general abuse pose problems.

Service-packed, economical U. S. 4810 Air Hose is available from your "U. S." distributor, any of our 27 District Sales Offices, or by writing to the address below. *Whatever* your hose requirements, you'll find it pays to turn to "U. S." There's a job-engineered U. S. Hose for practically every purpose—an expert staff of "U. S." Engineers to assist you with your hose selection.

- tough, flexible tube of neoprene provides top oil resistance
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READER COMMENT

Enforce codes, stop fires

SIR:

I was interested in your editorial in ENR Aug. 19, p. 180, in which you outlined various methods that owners of industrial buildings can use for handling fires in incipient stages, as well as for preparing barriers for controlling the spread of fires. Such means of fighting, controlling or stopping fires before they become too large and difficult to handle have been well known to building officials, insurance agencies and safety engineers for many years. Most building codes—even the most simple—in some manner, provide for height and area limits in buildings.

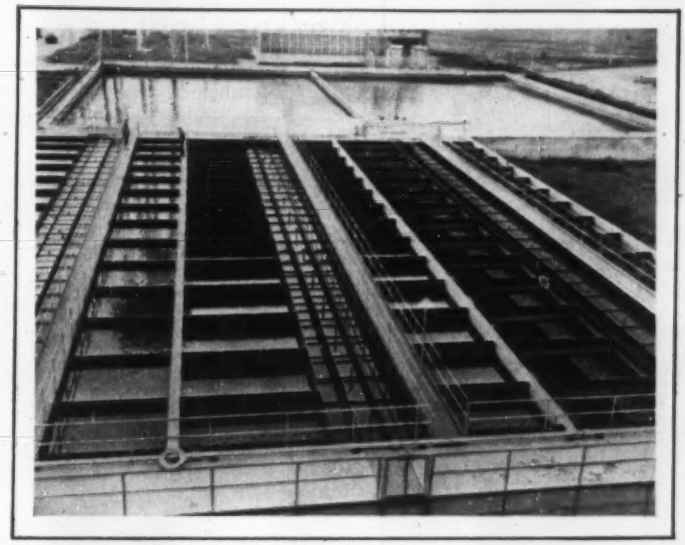
In spite of all the examples with which we are familiar, in which large property losses resulted from disastrous fires, it is doubtful whether the lesson has been fully learned. It may be true that one corporation has learned its lesson, as may have all other companies that have experienced serious fire damage, but in general, the lesson has not been learned. Building officials are constantly faced with the necessity of having to refuse permits for buildings having large unseparated floor areas.

Your editorial, therefore, is very timely. However, in the last paragraph you imply the fault lies partly in inadequate codes. In answer to your question, "Are building codes being revised to give recognition to the results in the Lavonia fire?", I can safely say that the conditions contributing to this fire are not new and that very rapid progress is being made in the adoption of recognized performance-type building codes.

Contributing causes to large fires are usually carelessness, large undivided and unprotected areas, uncontrolled uses of combustible and hazardous materials, unreported changes of occupancies, additions of processes not originally contemplated in buildings unsuited to such additions, incorrect electrical wiring, overloading of electrical circuits, indiscriminate additions of combustible separations, and many other questionable, unreported constructions.

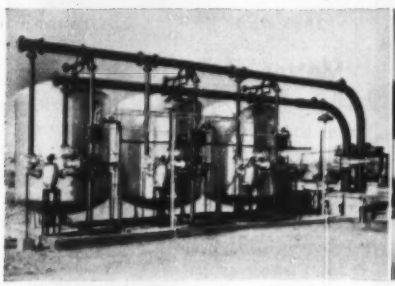
Fire safety will not be secured until the best known fire-safety methods are adopted and enforced in accordance with the requirements of one of the four nationally recognized codes, which have been developed as a result of the combined thinking and experience or leading building officials, architects, engineers, contractors, home builders, standards-making organiza-

(*Continued on page 12*)



PRECIPITATOR. Coagulation, precipitation and settling in one operation! Minimum space . . . stable effluent. Reduces turbidity, color, taste, odor, hardness, iron, manganese, alkalinity, silica.

WHICH Permutit Process will solve YOUR water problem?



ZEOLITE (Ion Exchange) SOFTENERS remove total hardness. Reduce iron and manganese. Permutit multiport-valve control is fully automatic! Saves operator's time . . . increases efficiency.

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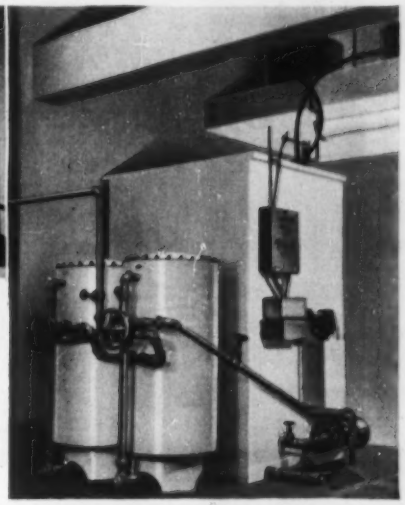

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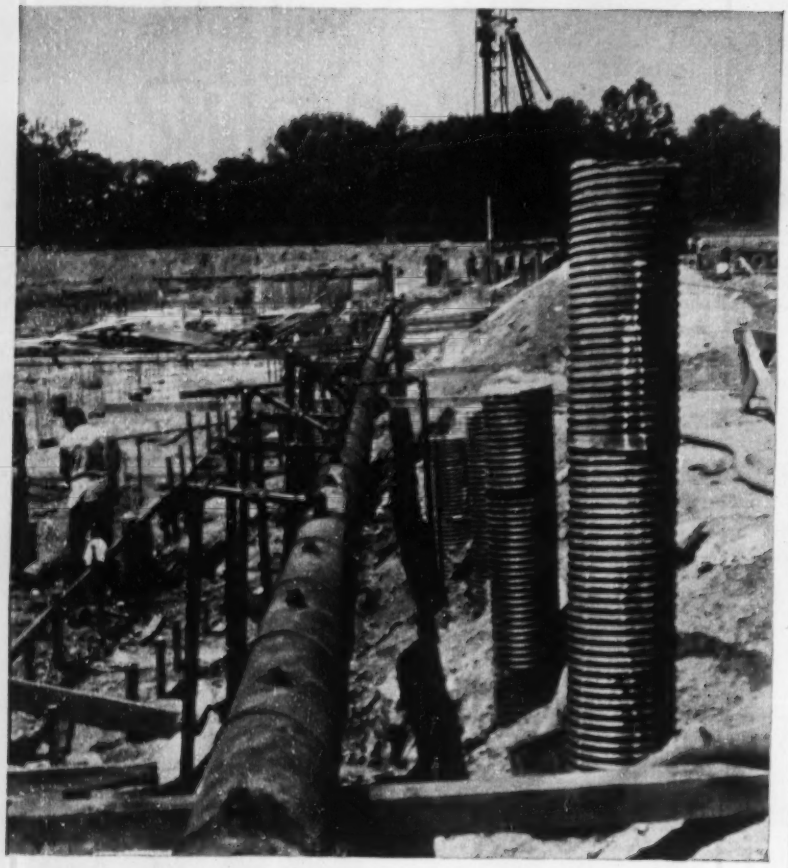

For getting rid of unwanted water on construction jobs, more and more contractors are turning to Naylor light-weight pipe. The wellpoint system illustrated here shows Naylor pipe in action, getting rid of surplus water. The distinctive, light-weight structure of Naylor pipe and its characteristic extra-strength and safety have made it outstanding for handling high and low pressure air and water on all types of construction. Sizes range from 4" to 30" in diameter with all types of fittings and connections. Write for Bulletin No. 507.

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READER COMMENT

tions, governmental departments, testing agencies, and others interested in safe building construction.

ALBERT H. BAUM
Building Commissioner
St. Louis, Mo.

On Sunshine Skyway

SIR: In describing the areas which will be benefited by the bridge (Florida's Sunshine Skyway, ENR Sept. 2, p. 30) your reporter wrote, "The effect becomes pronounced in peninsular Pinellas County, particularly in the county-seat St. Petersburg, . . ."

In the interest of accuracy, please do not lead our friends in the other forty-seven states astray. The county seat of Pinellas County is Clearwater, a much smaller city than St. Petersburg, located 25 miles north along the Gulf of Mexico.

S. L. VAN NORDEN
Superintendent, Maint. Dept.
Pinellas County Board of Public Instruction
Clearwater, Fla.

Matter of Taste?

SIR: May I submit an alternate design on the spelling of "desserts" in my letter on Bidding by Engineers (ENR Aug. 12, p. 12).

By dropping an "s" and making it "deserts", a simplified and more authentic orthography will result.

HOMER M. HADLEY
Consulting Engineer
New York

CALENDAR

Pacific Coast Building Officials Conference, annual convention, Cosmopolitan Hotel, Denver, Oct. 5-8.

Federation of Sewage and Industrial Wastes Associations, Netherland Plaza Hotel, Cincinnati, Oct. 11-14.

National Conference on Industrial Hydraulics, annual meeting, Sheraton Hotel, Chicago, Oct. 14-15.

Structural Engineers Association of California, Hotel del Coronado, Coronado, Calif., Oct. 14-16.

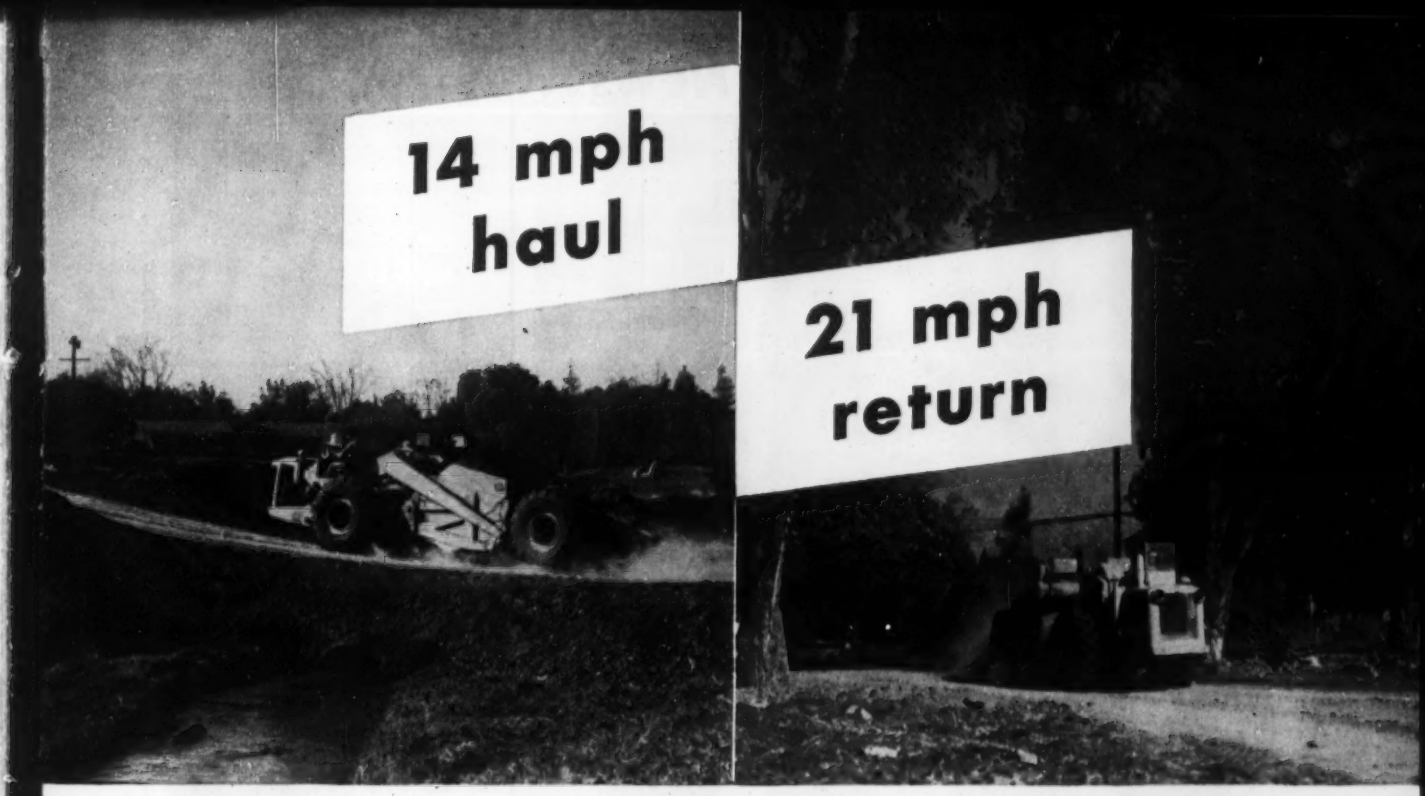
National Society of Professional Engineers, annual Fall meeting, Hotel Fontenelle, Omaha, Neb., Oct. 15-16.

American Society of Civil Engineers, annual convention, Hotel Statler, Ne wYork City, Oct. 18-22.

American Institute of Steel Construction, annual convention, Greenbrier Hotel, White Sulphur Springs, W. Va., Oct. 25-28.

Plastics in Building, conference sponsored by Society of the Plastics Industry, Inc., the Manufacturing Chemists' Association, and the Building Research Advisory Board, at the National Academy of Sciences, Washington, D. C., Oct. 27-28.

Engineers Council for Professional Development, annual meeting, Alms Hotel, Cincinnati, Oct. 28-29.



moves 10 loads hourly on 1.4 mile cycles

To grade 53,000 yards of sand and loam for new South Reseda Junior High School, Westway Excavating Company, Los Angeles, drove in 4 electric-control D Tournapulls. Aided by good haul roads and favorable weather, the speedy "D's" kept Westway ahead of a tight 34-day schedule by performing like this:

Loads 7 yds. in 30 seconds

Equipped with sideboards for extra capacity, D Tournapulls were push-loaded with 7 pay yards of sand and loam in ½ minute. Haul of 3700′ took 3 minutes (14 mph). Spread and 3700′ return over same route averaged 2 minutes (21 mph). According to Job Foreman Wayne Lister, each Tournapull regularly completed 10 cycles of 7400′ per 55-minute hour. That's a fleet output of 280 pay yards per hour. "We prefer D Tournapulls," Lister says, "because of their size (7 yards) and speed (28 mph). Down time is nil in comparison with larger haul units. And, if one of your 'D's' does go down, your production loss is just a fraction of what it would be if you use fewer large units."

Pushed by 148 or 93 hp crawler, D Tournapull with 1½′ sideboards loads 7 pay yards in 30′.

Tournapulls save on job-to-job moves, too. With D Tournapulls, there is no blocking or unblocking, no waiting for trailers, no problem with width limitations or over-weight . . . operators just climb on and drive over any roadway like they would a car. We'll be glad to demonstrate on your next job to prove it to you. Call us to arrange a date. No obligation, of course.

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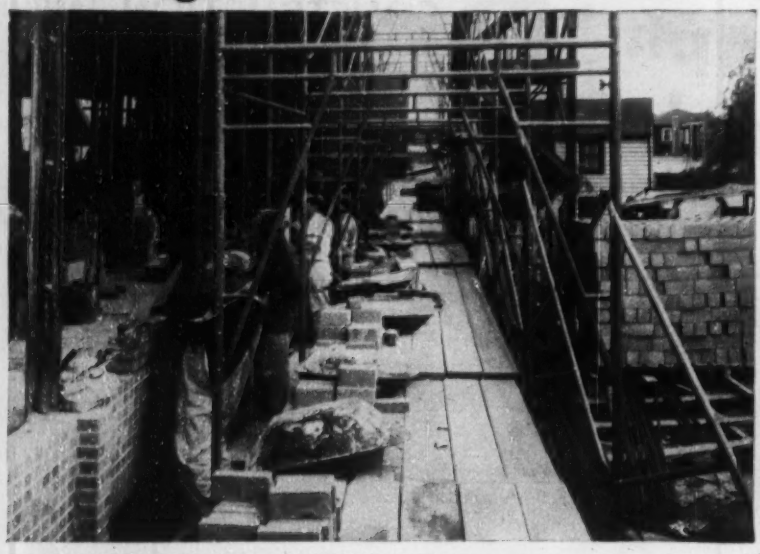
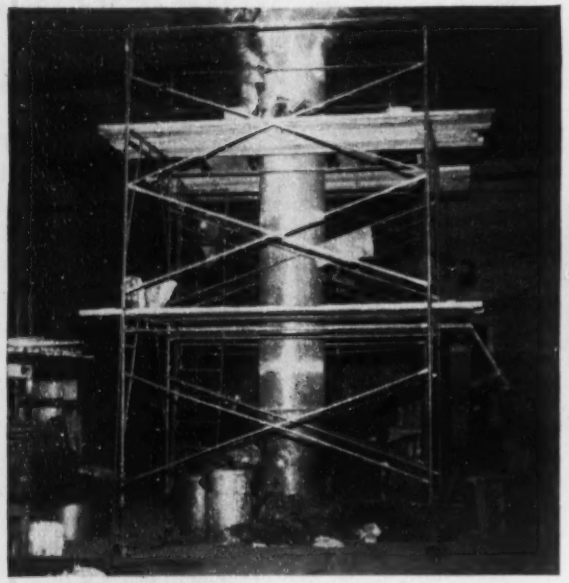
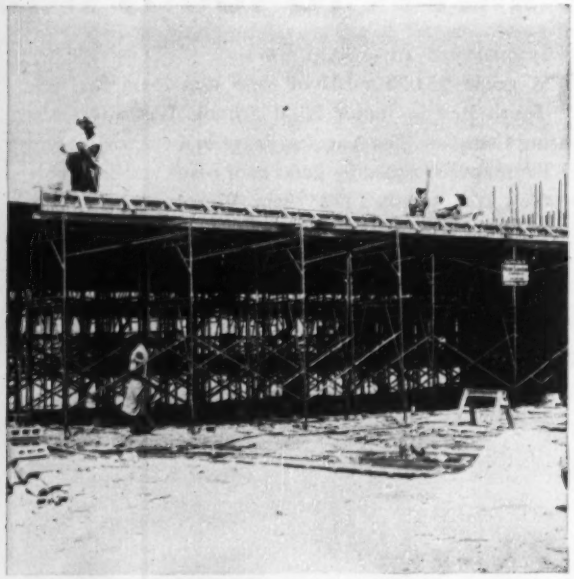


WALKROOM AND WORKROOM—On masonry jobs it is important to get mortar and brick from the hoist tower to the masons quickly and easily, without delaying work. General contractor Cuzzi Bros. and Singer solves the problem on this 4-story Brooklyn job by using "Trouble Saver"® Sectional Steel Scaffolding for a wide, unobstructed platform. The 6'6" shallow-trussed frames provide plenty of headroom for delivery of materials and support a 5'-wide platform to hold them. Masons work from a separate, movable 20"-wide platform laid on sidewall brackets attached to the main scaffold. This scaffolding method keeps materials easy to reach, puts men at most convenient level.

A SLIDE LOCKS IT—New "SlideLok" device speeds scaffolding erection and dismantling time on Bell Telephone Co. construction in Cleveland, Ohio. Here an erector uses "SlideLok" to secure "Trouble Saver" frame and cross brace. Instant locking is achieved by lifting slide outward, slipping brace over frame stud, then lowering slide into locked position.



GOOD TRAVELERS—"Trouble Saver" Rolling Scaffolds were easily moved from one capital column to another during construction of a huge warehouse for Colgate-Palmolive in Jersey City, N.J. The mobile scaffolds, 5'x10'x14'-high, quickly and safely placed cement finishers conveniently close to overhead work. "Trouble Saver" Sectional Steel Scaffolding was also used for concrete shoring on the job. George A. Fuller Company was the general contractor.



GOLDEN SHORES—To provide safe, economical shoring for this concrete slab overpass, joining two parts of the Chatlos Motel in Golden Shores, Fla., the Taylor Construction Co. rented 413 5'-wide "Trouble Saver" Sectional Steel Scaffolding frames. Auto traffic will pass beneath the overpass, built on a curve. The center panel of the 8'-wide slab varies in thickness from 3' at the abutment to 16" at the center of the arch.

To help you solve any scaffolding problem, PS offers a complete nation-wide engineering service—available locally. See the Yellow Pages in your 'phone book for the nearest Patent Scaffolding office or representative handling "Gold Medal" Scaffolds.

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ENGINEERING NEWS-RECORD

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THE CONSTRUCTION WEEK

TEN BETTER—Not content with President Eisenhower's proposals for a national highway construction program, the American Road Builders Assn. has gone the President ten better—ten billions, that is.

Talking to ARBA's meeting at Columbus recently, Lt. Gen. Eugen Reybold (CE, Ret), association secretary, called for a $60-billion program, not the $50 billion boosted by the President.

TEST RUN—Alberta (Canada) provincial highway engineers are planning a concrete vs asphalt test to see which material does better on the province's silty, clay-type soils.

The province will build equal 4,900 ft stretches of concrete and asphalt pavement from the junction of the Edmonton-Calgary highway and the Trans-Canada Highway north to the Edmonton Municipal Airport. Asphalt will go into the southern and concrete into the northern sectors of the road.

Not content with this trial, the province will try another combination on the same stretch of road: a mile section of pavement made of a rubber and asphalt mixture.

SAFE SWIM—If you should fall into the 8-ft-deep, 35-ft-wide channel of the siphon inlets of Gateway Canal (on Utah's Weber Basin project), don't worry—you're swimming in one of the safest waterways built by man.

There are broad, low steps built into the transition structure, starting below the water level. If you fall in, say Reclamation Bureau Experts, all you have to do is float for a couple of minutes, and you'll be washed to safety on the steps.

WHOSE JOB?—Latest development in the long fight over who is to build the $350-million Priest Rapids dam on the Columbia River is court action.

The Washington State Power Commission must appear in Grant County Superior Court at Ephrata Oct. 8 to answer a move for a restraining order asked by the Grant County Public Utilities District. The PUD wants to build the dam itself.

COMMENT AND DISCUSSION—Omaha's public power district opened its new $17-million North Omaha power plant—and ran into sharp criticism from the Douglas County Grand Jury.

Said the jury: The district shouldn't have made all phases of construction emergency work, thus dispensing with public bidding.

Said the district: The Korean incident was in progress, materials were hard to get, and the district was being pressured by the federal government to build reserve power.

B. F. Goodrich announces

Koroseal now used in roofing helps prevent fires like this

Koroseal is part of new Lexsuco roof construction

A NEW type of construction cuts out a fire hazard in flat roofs. Koroseal flexible material is used to replace the conventional vapor barrier made up of asphalt and layers of asphalt-saturated felt.

Use of Koroseal eliminates burnable material between roof deck and insulation. It also prevents tar or asphalt from dripping down to feed fires below the roof. Other features of the new roof make it more rigid, help cut down buckling during a fire.

The Koroseal flexible material used in the Lexsuco roof construction is specially compounded for this use. It is supplied in rolls for easy handling as shown in the photo. It is rolled out in strips and the laps are sealed. Full-scale fire tests have proved the advantages of this new type of roof over ordinary construction. Yet the complete roof costs no more, sometimes less than standard roofs. B. F. Goodrich does not make direct sales of Koroseal for roofing—*you can get complete facts by writing Lexsuco, Inc., 4819 Lexington Ave., Cleveland 3, Ohio.*

Koroseal flexible material is made in many forms: hard or soft, film or sheet, it can be molded or extruded, fabric can be coated with it. Koroseal may have many future uses in the construction industry. It is waterproof; will not crack, chip or peel, is not affected by paint or by most chemicals and acids. If you have a problem Koroseal may help solve, write: *The B. F. Goodrich Company, Marietta, Ohio.*

Koroseal—T. M. Reg. U. S. Pat. Off.

Koroseal

FLEXIBLE MATERIALS BY

B.F.Goodrich

INDUSTRIAL PRODUCTS DIVISION

WASHINGTON OBSERVER

Eisenhower's new $50-billion highway program will go to Congress in January. Gen. Clay, as top expediter for the White House, will go ahead with a report and recommendations—which will be made part of a Presidential message—even if this puts the Administration ahead of other interested groups that can't move ahead this fast.

The governors' highway committee has been unable to meet because five of the seven are up for election and just can't take time off from campaigning.

Clay's staff has met with a dozen or so organization officials—staff men from organizations of state and local highway officials, manufacturers of vehicles, farm agencies, and other groups with a direct interest in highways.

A big open meeting will be held by the Clay committee in Washington Oct. 7 and 8 to bring out ideas on the main problem—how to finance $5 billion a year of highway construction over and above the present $4 billion a year of road building. All organizations and interested parties are invited to the two-day session.

•

Clay's committee says it is still wide open to suggestions on financing plans and on re-allocation of highway building responsibility and highway building funds. But many officials hope they'll be getting some sign privately from the White House group as to just which way and how far their thinking has gone. They know that a strong line from the Administration is necessary if the program is to get off the ground.

A new government agency or corporation to issue or guarantee bonds is now almost a certainty. The idea is to have only principal and interest show as an expenditure in the federal budget each year—rather than the actual annual spending on highway building, and there's a plan under wraps to get the highways built without raising either state or federal gas taxes.

•

Committee of federal agencies headed by Public Roads chief Du Pont is working along with Gen. Clay, who represents the President. Officials of Treasury, Defense Department, Council of Economic Advisors, and Bureau of the Budget are looking out for the federal government's interests in the new program—seeing how any proposal affects the military, the national economy, and the federal budget.

•

Yield insurance is FHA's answer to squawks from builders about rental housing. The builders say that the new law's requirement of insurance on only 80% of actual cost has already effectively blocked the steady volume of rental housing construction built with FHA mortgage insurance. Yield insurance has been part of the housing law since 1948, but it has been little used.

FHA officials are publicizing the benefits of this financing method in the hopes of interesting insurance companes, and other investors.

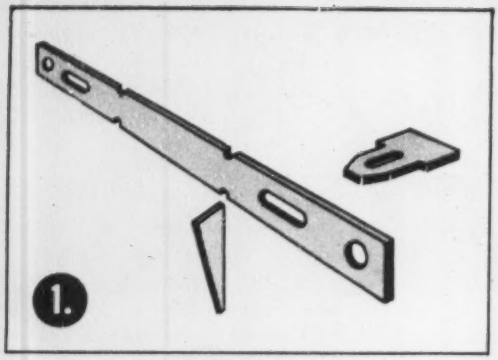
Yield insurance is an FHA-guarantee of payments due the investor who buys the bonds of an apartment-owning corporation.

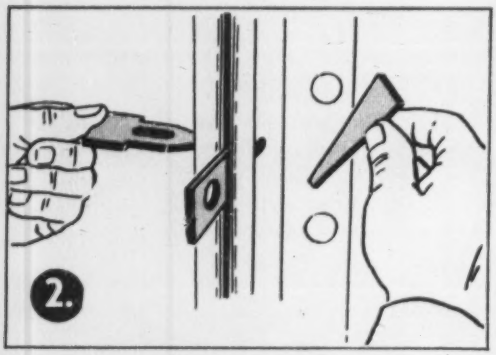
•

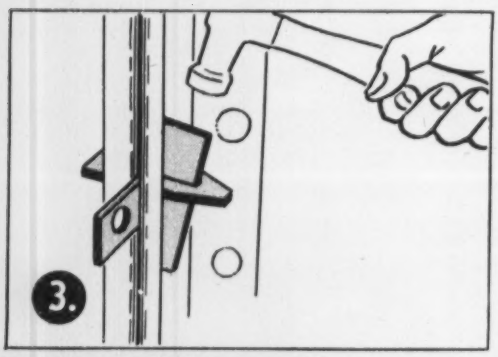
Bureau of Yards and Docks is finding Spanish base costs lower than their estimates so far by about 20%. Construction bids on Air Force work at the Torrejon and Zaragoza bases have been this low—and so have prices bid on 30,000 metric tons of cement.

•

Official announcement of a U. S.-Canadian radar net across the upper reaches of Canada to give early warning of any invading forces will tie in with the broadened program of radar defense in this country (ENR Aug. 12, p. 24). Construction will be done by Canadians, and maintained by Canadian forces. The U. S. part will be finance, and providing electronic equipment.







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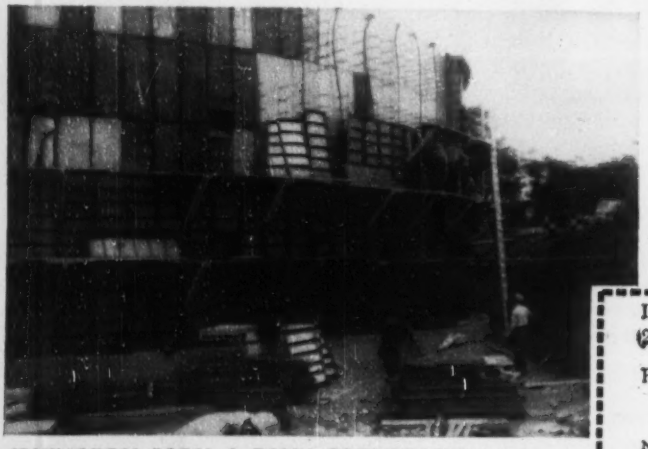
Builders and contractors all over the country are finding our "know-how" the ideal teammate for theirs. Find out how you can profitably put it to work for you. Write today—or use the handy coupon to get complete information.



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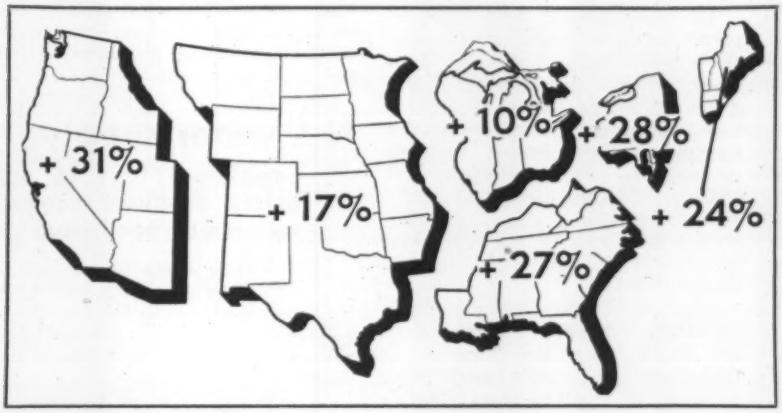
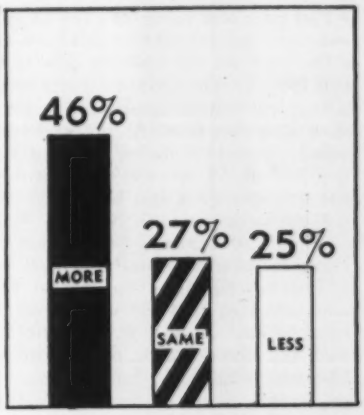
Dollar volume of work on drawing boards is 24% ahead of a year ago, and . . .



73% of firms in survey have as much or more



1955 forecast:

Heavy construction is headed for its second biggest year

Heavy construction contract volume next year will run better than $15.2 billion, according to ENR's preliminary forecast for 1955.

This means that '55 is due to become the second highest year on record and will outdistance this year's estimated $14.4-billion volume by 6%.

The gain forecast for '55 is predicated chiefly on what looks like a record volume of contracts for state and municipal public works of $5.8 billion, which would be 12% over this year's figure. Highways should account for $2.4 billion, a gain of 20%, and bridges for $600 million, a 3% increase.

Thanks to St. Lawrence Seaway and power project, a 39% increase is expected in the dollar volume of contracts for earthwork and waterways. Sewerage and waterworks construction is expected to maintain this year's level. A 5% increase is forecast for public buildings contracts.

On the basis of available funds, federal work should be up about 10% over the low '54 volume. However, if state and local public works boom and the general employment picture doesn't worsen, some federal contract letting may be held back for possible future pump-priming. Although construction appropriations for fiscal '55 were 18% greater than for fiscal '54, there have been some sharp Budget Bureau cuts in budgeted expenditures since Congress voted funds in July.

Private construction looks as though it should hold its own through '55 and possibly show a gain of 1%. Commercial building is expected to climb about 6% and industrial construction is predicted to come out of its '54 slump with a similar gain in '55. Housing is more difficult to predict. A 6% decline forecast for '55 easily could turn out just the opposite. It depends to a large extent on whether lettings for large housing developments, unusually high in '54, will continue into next year.

• **What's behind the optimism**—Here are four key factors which would seem to support the optimistic outlook for '55:

• ENR's records of proposed work show that projects have been entering the backlog at the consistently high rate of over $1.1 billion in each of the first eight months of this year, bringing the total backlog at the end of August to a record $77.3 billion. Though the inflow is somewhat less than in '53, it is significant that a good percentage of the new proposed projects are state and municipal public works, notably toll roads. The planning stage on many of these projects should be over in time for them to be released for contract letting in '55.

• Latest ENR surveys of architects, consulting engineers and A-E firms—679 of them in all parts of the country—shows that 46% have more work on their drawing boards scheduled for '55 lettings than they had on hand a year ago for '54 awards. Another 27% reported they had about the same amount as a year ago. The dollar volume of the work now on the drawing boards is 24% higher. Thirty-two percent of those reporting say design contracts are coming in at a faster rate than a year ago; 37% say the rate is about the same.

• State and municipal bonds sold for new construction (exclusive of public housing) thus far this year total more than $4 billion—setting a new record and exceeding by 32% sales during the same period last year. While some of this money already has been paid out, the bulk of it is for work not yet under contract. Bond issues approved in local elections for the first eight months are 66% ahead dollarwise than approvals during the same period in '53.

• Results of an early September survey by the Associated General Contractors of America, covering 124 of its local chapters, indicate that a good

(Continued on page 20)

. . . 1955 forecast

many contractors already are convinced that a big year is on the way. On the basis of AGC's three functional divisions reports showed that better prospects for the next six months were predicted by 43% in the building category, 59% in the highway field, and 42% in the heavy construction division.

• **Fast pace now being set**—The second and third quarters of this year have set a fast pace for the upswing now forecast for '55. The second quarter went a long way toward compensating for a slow start this year. At the mid-year, volume was 14% below that for the first half of '53, whereas at the end of the first quarter it had been 34% below the same period in '53.

The third quarter's $4.3 billion in contract awards—second highest on record—has narrowed the gap to 5% and indicated that '54 will be up to expectations. And, it is worth noting that the three-month period ending this week would have been the highest on record, except for the $2.2 billion in atomic energy plant awards that put the third quarter of '52 at an all-time high.

• **Architect-engineer survey results**—All regions of the country contributed to the 24% increase in the dollar volume of 1955 heavy construction projects on the drawing boards of firms included in the ENR sampling of the current design work load. The increases ranged from 31% in the Far West to 10% in the Middle West (see map on page 19).

The percentage of firms which reported having the same or more work on the boards was highest in the South, where 51% said they were busier than a year ago and another 32% said they were in about the same position. New England was the region with the highest percentage of firms with more work and it also had the highest percentage of firms reporting design contracts coming in at a faster rate than a year ago (see tables below for regional breakdown).

The survey indicated that the next six months will see a considerable number of job opportunities opening up in engineer and architect offices. Since last year, 37% of the firms reporting have increased their staffs. Another 46% were status quo; only 16% were forced to cut down. But, 48% of the firms said they planned to add to their payrolls in the next six months. The growing demand for engineers and architects is pretty general. Again, New England shows the greatest need. (See table below for regional breakdown).

As could be expected, half the firms surveyed find public works more active then private projects. This is the pattern all over the country with the exception of the Middle Atlantic states, where 57% report private work coming in faster than public. And, in the Middle West, public works has only a slight edge.

How volume of work now on boards for 1955 contracts compares with a year ago

How inflow of new work in architect, engineer offices compares with a year ago

Firms by regions	% of firms reporting volume is . . . Larger	Smaller	Same	% of firms reporting inflow is . . . Faster	Slower	Same
U. S. Total	**46**	**25**	**27**	**32**	**29**	**37**
New England	64	17	17	52	26	19
Middle Atlantic	41	26	31	22	24	50
South	51	15	33	36	27	35
Middle West	36	28	33	22	32	42
West of Miss.	50	25	24	37	25	36
Far West	47	31	19	30	42	24

How staff employment fared over past year

How staff requirements look for next 6 months

Firms by regions	% of firms reporting these changes in their staffs in last 12 months . . . Larger	Smaller	Same	% of firms reporting these planned changes in staff in next six months . . . Increase	Decrease	Same
U. S. Total	**37**	**16**	**46**	**48**	**11**	**25**
New England	43	12	43	71	5	7
Middle Atlantic	33	18	48	42	13	32
South	38	10	50	50	9	23
Middle West	33	13	49	41	11	29
West of Miss.	36	18	45	51	9	27
Far West	39	21	37	50	17	19

N.J. water supply

Legislature fails to act before deadline required for vote on bond issue

New Jersey's legislature—in special session to consider putting a vital water supply question on the November ballot—let a Sept. 23 deadline pass without taking any final action last week.

In so doing, it put off for months, probably for a full year, any possible start on a sorely needed water storage reservoir in northern New Jersey's Round Valley.

And with the project is pigeonholed development for water supply of the so-called Wharton Tract in south Jersey (ENR May 27, p. 27).

Legislation was needed before last week's deadline to authorize a referendum on approval of an $85-million bond issue to finance construction plus some of the real estate costs of the proposed projects.

Before adjourning, the special session did act to put on the November ballot the question of a $25-million state medical-dental school, site undecided.

New Jersey's legislature is technically in recess and could conceivably come back after Election Day to reconsider the water supply question, maybe even put it to the people at a primary election next spring. But this is unlikely.

Most observers see it as a dead issue for the rest of the year.

The new legislature convenes in January.

Industrial northern New Jersey is generally conceded to be an area of critical water shortage. Reservoir storage space is the need. With reservoirs totaling a dependable safe yield of 400 mgd, the area is now consuming 425 to 450 mgd of water. Big Wanaque Reservoir reportedly held 60,000,000 gallons less water last week than it held before Hurricane Edna dumped her 5-in. rainfall Sept. 11.

APWA congress

Approves standard forms for bids and contracts

The American Public Works Association at its 60th annual congress, approved a set of standard bid and contract forms for all types of construction jobs except buildings.

The forms were prepared jointly by APWA and Associated General Contractors of America, Inc. AGC previously had approved the forms, so with APWA approval the forms now can be printed and made available to contractors and public works officials.

The standard forms packet includes an invitation for bids form, a set of instructions to bidders, a proposal form, a contract agreement and a set of general contract conditions.

The APWA annual congress, held last week in Atlantic City, N. J., also heard Willard T. Chevalier, executive vice president of the McGraw-Hill Publishing Co., announce a new annual $1,000 fellowship award to be made available by ENGINEERING NEWS-RECORD for advanced study in public works engineering and administration.

The fellowship will be administered and presented by APWA.

The annual $500 Charles Walter Nichols Award was presented to Lem D. Merrill, Superintendent of Streets and Sanitation in Birmingham, Ala., for his leadership in the development and modernization of the city's public cleansing operations.

• **Standard specifications revised**—During the congress, the revised 1954 edition of APWA standard specifications for subgrades and foundations for pavements was released. The specifications booklet, originally published in 1936 by APWA, is intended to serve as a guide for public works engineers charged with drafting contract specifications.

The booklet is composed of five sections, with these titles: earth subgrade; pavement foundation of water-bound macadam base course; pavement foundation of bituminous macadam base course; pavement foundation of hot-mixed, hot-laid asphaltic concrete base course; and pavement foundation of portland cement concrete base course.

The specification booklet is available at the offices of APWA, 1313 E. 60th St., Chicago 37, Ill. Price is $2.

President dedicates McNary Dam

President Eisenhower pushes a button to start the fifth generator at McNary Dam on the Columbia River. The President told a crowd of 30,000 at dedication ceremonies for the $286-million multi-purpose structure that the federal government would push ahead with river basin development programs. He defended GOP power policy—a hot political issue in the Northwest—and said the goal of his Administration was "to assure each citizen enough kilowatts, when he wants them, where he wants them and at the lowest competitive cost."

Turnpike proposal

Firms offer to build pike on fee basis to cut cost

A group of contractors and engineers has proposed to build a turnpike across Ohio from Cincinnati to Conneaut, in the northeast corner of the state, on a fee basis to save some $46 million of the estimated $571-million cost of the project.

The Ohio Turnpike Commission said it has received the proposal, but it did not name the engineer firms involved. Reliable reports, however, said the firms were Merritt, Chapman & Scott, and Thompson, Starrett Co., both of New York. Brown & Blauvelt consulting engineers, New York, would be associated with the two principal firms.

The proposal from the firms came after a traffic and revenue survey by Coverdale & Colpitts, New York, had indicated that only one 74-mi section of the 398-mi project would yield enough revenue to be attractive to the bankers (ENR Sept. 25, p. 25).

The proposal was not well received by the Ohio Turnpike Commission. Chairman James W. Shocknessy termed it "fantastic and wholly untenable."

He said that it would "completely eliminate competition" on construction jobs for the project.

Some other members of the commission expressed doubts as to the legality of such an arrangement under the Ohio Turnpike Act. The commission has the proposal under consideration, but has not yet arrived at a definite decision.

The firms proposed that they take over all turnpike building activities of the commission and let subcontracts for actual construction. They offered to put up a bond of $25 million and guarantee that no construction job would cost more than the estimate by commission engineers.

Their fee for handling construction of the turnpike would be 7½%. In addition, they suggested a special provision under which all savings on the job would be split 60% to the commission and 40% to the combine.

Robert S. Beightler, executive director of the turnpike commission, said similar arrangements were under consideration by turnpike commissions in several states.

Beightler and his staff now are reviewing engineering reports on the project in an effort to find ways to cut its estimated cost. The State Highway Department also is expected to re-run some traffic surveys to determine if the original revenue estimates may be raised.

Urban redevelopment laws face test

Supreme Court will hear arguments on constitutionality of legislation for condemnation and resale of property

The Supreme Court of the United States, when it comes back Oct. 4, will quickly hear arguments on the constitutionality of the District of Columbia Redevelopment Act of 1945. The fate of similar urban redevelopment programs under legislation enacted by over 30 states will be at stake in the court's decision.

All the laws are more or less similar in general design. They provide for the assembly of land—by purchase or condemnation—and resale of the land to private interests for actual redevelopment. The Housing Act of 1949 authorizes federal financial assistance to aid in such redevelopment programs through the Housing and Home Finance Administration.

The Supreme Court, therefore, has the chance to clear the way for the D.C. program and to clear up some of the confusion existing around the powers of the states to act under their redevelopment laws.

In the District of Columbia case, these are the specific questions the court will have to answer:

- May an administrative agency (the D.C. Redevelopment Land Agency) seize land by eminent domain solely for the purpose of redevelopment or because the property lies within an area designated by the agency as "slum" or "blighted?"
- Does a law authorizing the taking of private property for private use violate the due process clause of the fifth amendment?
- Does a law, designed to eliminate substandard housing conditions, empower an administrative agency to seize commercial property not exclusively used for housing? (Most urban redevelopment plans include grocery stores, dry cleaning shops, etc., along with housing.)
- Is a law which does not include specific standards for guidance in carrying out its function an unconstitutional delegation of legislative power to an administrative agency?

A special three-judge court upheld the constitutionality of the D.C. law last November. It dismissed the injunction suit filed by a balky department store owner whose property lies within the 76 acres of area "B", the first project marked out by the RLA for redevelopment.

The trouble is that the D.C. law—like most state laws—talks about redevelopment not only of "slums", but also "blighted," "deteriorated," and "out-of-date" areas. The D.C. court ruled that so long as land is seized for the public purpose of eliminating actual slums—even though the land is later sold for private uses, such as housing and commercial buildings—it is constitutional seizure within the rights of eminent domain.

But, said the court, legislators have no power to authorize seizure of an entire area where only part of it is slum just because it is "18th century." The test of a public purpose which validates seizure of private property, it ruled, is the prevention of injury to public health, safety, morals or welfare.

In other words, the law as upheld permits only seizures of property reasonably necessary for slum clearance and slum prevention.

The federal government, which is representing the RLA and the D.C. city fathers in the court case, is ready to argue that this is too narrow an approach to a neighborhood which is part slum, part only "out-of-date." It will tell the Supreme Court that not only is the law constitutional but the lower court has made too restricted an interpretation of it. The point is that a Redevelopment Agency would be forced to take a "piecemeal approach" to areas, leaving isolated structures in the hands of recalcitrant landowners.

The government says this approach would prevent collection of all the land in such areas, leaving around some of the very conditions producing slums which a redevelopment program is supposed to eliminate.

The opposing argument is pretty good, too. The store owner is not against slum clearance. What he's against is seizure of his property—concededly not a slum property—just because it lies close to substandard housing. He argues that selling his land to a real estate company, which will tear down his store and perhaps build another in its place to be sold to someone else, isn't eliminating slum conditions in the other property. And so the seizure in the first place is neither for a "public purpose" nor constitutional.

But the redevelopment program in the District is going ahead. On the basis of the lower court decision last year, it has been taking title to property and knocking down blocks of old buildings.

In the meantime the firm of Webb & Knapp, which will handle redevelopment of the much larger (471 acres) and more ambitious project area "C" in the capital, is now waiting HHFA approval of its final plan for the project. RLA may begin to buy land in area C before next March.

William Zeckendorff, president of Webb & Knapp, has said that if redevelopment can be put over in Washington on a scale comparable to what so far is still a vision, then the same thing can be done anywhere in the country.

Bank vault boasts eight million watchmen

Giant vault of new Fifth Ave. bank of Manufacturers Trust Company in New York stands just 10 ft inside the glass-walled building, in plain view of all passers-by. Luminous ceilings, lighted all night long, make it easy for any of New York's eight million to check the vault, any time during the day or night.

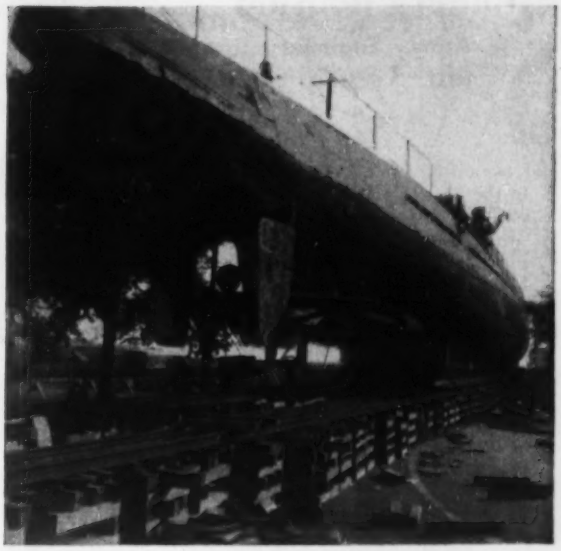
Ceilings were manufactured by Marlux Corp. on a special design developed by Leonard F. Martin, Marlux president, in collaboration with Parry Moon, of Massachusetts Institute of Technology, and Domina Eberle Spencer, of University of Connecticut.

Light from cold cathode fluorescent tubes mounted 18 in. apart is diffused through translucent vinyl plastic to give shadowless illumination and high light level with low source brightness. The plastic diffuser is corrugated for rigidity and supported on a grid of aluminum T-bars suspended about 3 ft from the structural ceiling by adjustable steel straps.

All wiring and duct systems, including air conditioning diffusers, are hidden by the plastic ceilings.

Exterior feature of the building is its glass curtain walls with the largest panes of glass ever cast in this country (ENR Jan. 14, p. 24).

IN THE WATER, captured German submarine moves up to landing pier in floating drydock. Sidewalk superintendents on Lake Shore Drive watch operation.



ON LAND, submarine inches along stern first on steel rollers, rails and timber cribbing. Cruise across Lake Shore Drive was accomplished in one night.

How Hitler's sub got to Chicago's museum

Handling a submarine in the Atlantic Ocean probably is complicated enough; moving it up onto dry land and across a busy, big city street is a job that calls for an unusual combination of skills.

That is the job just accomplished in Chicago. There, a civic committee enlisted some top-notch engineering talent and raised a fund of $200,000 in cash, services and materials to haul the German submarine U-505 out of Lake Michigan, drag it across Lake Shore Drive and install it in the Museum of Science and Industry at Jackson Park.

The sub, captured during World War II, left Portsmouth, N. H., Naval Shipyard under tow last May 14 on a 3,000 mi voyage down the St. Lawrence River and across the Great Lakes to Chicago. It was delivered to the Great Lakes Dredge and Dock Co. and put aboard a floating drydock in which American Shipbuilding Co. had built a transporting cradle.

Concrete sills in the cradle were made of grouted concrete, in short irregularly shaped sections to match the contours of the bottom of the sub. They rested on heavy timber runners of variable thicknesses to provide a continuous, level bottom surface. Beneath the timbers were 14-in.-wide flange saddle beams which rested directly on solid steel rollers 2¼ in. in dia and 2 ft long during the moving of the submarine.

While the U-505 was being readied in the floating drydock for her overland journey, a landing pier was built to receive her on the beach opposite the museum by the Lake States Engineering Co. and the L. B. Foster Steel Co.

Then, the FitzSimons and Connell Dredge and Dock Co. dredged an approach channel 80 ft wide and 9 ft deep to the end of the pier. Shifting sands made it necessary to dredge the channel three times before the submarine was beached successfully. Seth M. Gooder, retired consulting engineer, assisted by K. C. Thornton, naval architect of the American Shipbuilding Co., directed this operation.

• **Tricky landing job**—Landing the sub on the pier was the trickiest part of the operation. The ship is 252 ft long and weighs about 840 tons as calculated by lifting it with a group of hydraulic jacks. She was brought in and landed stern first, each end overhanging the floating drydock about 65 ft.

By careful calculations the drydock was ballasted to bring the sub in about 5 in. higher than the landing pier. Then, by taking on more water ballast, the shore end of the cradle—which extended 5 ft beyond the front end of the drydock—could be positioned on the outer end of the pier.

The sub was pulled ashore by a truck-mounted winch anchored on the beach. A 12-part line ran from the truck winch to the sub and back to a heavy crawler tractor which served as a deadman. As the weight of the sub was transferred from the drydock to the pier, water ballast had to be taken on in the rear compartments of the drydock to keep it on an even keel. Lines to two sets of piling in the lake helped keep the rear of the drydock from rising as the sub's center of gravity shifted shoreward.

• **Crossing Lake Shore Drive**—After the submarine had been transferred from the floating drydock to the landing pier, the next step was to jack it up about 4 ft to clear the curbs and roadway of Lake Shore Drive. Jacking with 35-ton mechanical jacks, 20 on each side, took several days. Once raised to the required grade and supported on two pairs of railroad rails atop 6x6 in. cribbing, the sub was rolled on steel rollers across the street in one night.

Short steel plates, about 14 in. wide and ½ in. thick were placed between the top of the rollers and the bottom of the 14-in. beams of the submarine cradle. Hardwood wedges between the plates and beam flanges kept the weight of the ship evenly distributed on the railroad rails.

The last part of the journey—about 625 ft from just across Lake Shore Drive to the museum—was accomplished by the same moving technique. As a final operation, the submarine was pivoted about 45 deg into final position. Mounted on its concrete cradle at the east side of the museum, it was dedicated in ceremonies on Sept. 25.

Military housing

Army Engineers award first design contract

The Army has awarded the first architect-engineer contract under the new military family housing program to the Seattle firm of Durham, Anderson and Freed. The contract is for plans and specifications for 800 units to cost about $10 million at Fort Lewis, Wash.

The award was made by the North Pacific Division Engineer at Seattle on the assumption that the project would be cleared by the Secretary of Defense for construction. No projects have been certified so far, by the Defense Secretary as required by the new law.

A total of $175 million of military family housing is authorized, but Congress appropriated only $75 million for this fiscal year. Of that amount $37.5 million has been allotted to the Air Force, $26.25 million to the Army, and $11.25 million to the Navy.

Military post commanders now are preparing papers on possible housing projects for submission to the Secretaries of the Army, Navy and Air Force. These documents must include findings that the proposed construction will not adversely affect privately financed housing construction—including Wherry Act projects—in the vicinity. It is on this point that the Defense Secretary must make certification.

For most of the new projects, award of architect-engineer contracts will await action by the Defense Secretary. The program then will move ahead rapidly in accordance with plans of the Defense Department (ENR Sept. 2, p. 23).

Power agency rejects 3 bids, negotiates St. Lawrence job

The New York State Power Authority has negotiated an agreement with Walsh Construction Co. to build a temporary pontoon bridge over the St. Lawrence River from Hawkins Point to Barnhart Island, site of construction of the St. Lawrence Power project.

The authority said it opened negotiations for the job with several contractors after rejecting three bids running from $1.2 million to $2.2 million as "excessively high." Walsh Construction Co. agreed to do the job for $985,000.

Completion of the temporary bridge is scheduled for early spring so that it may be used to bring materials to Barnhart Island during the next construction season. The need for speedy construction and the swiftness of river currents at that point made necessary a unique design for the bridge.

The structure is called a "horizontal suspension bridge," it has carfloat-type pontoons held in place from the upstream side by a cable anchored to both shores. On the pontoons will be a two-lane steel truss bridge in two sections, each 250 ft. long. Praeger-Kavanagh, New York, designed the temporary bridge as well as a permanent structure, a cantilever continuous truss with a 500-ft center span to be built a short distance upstream. Bids on the permanent bridge will be called soon.

Bids called for canal project

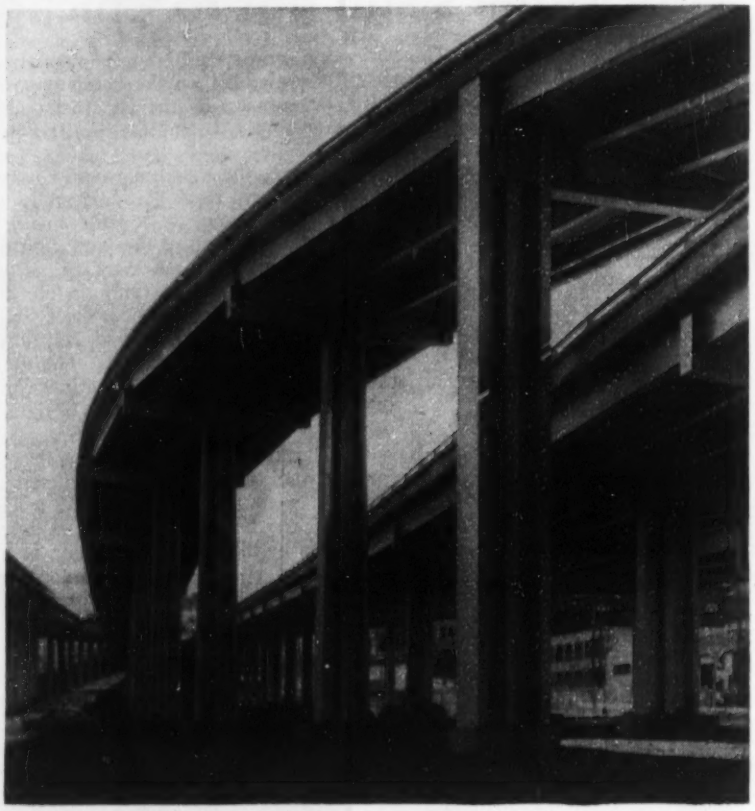
The Bureau of Reclamation has issued a call for bids for the construction of 7.4 mi of the 21-mi-long Corning Canal, a unit of the Sacramento Valley canals project in nothern California. Bids will be opened in the bureau's office in Red Bluff, Calif., on Oct. 20. Two other contracts will follow to complete the canal.

Jobs in the news

DEPARTMENT STORE—Meir & Frank Co., Portland, Ore., will construct an $8-million department store in Salem. Diesko & Post and Hoffman Construction Co., Portland, are contractors; Welton Beckett & Associates, Los Angeles, are engineers; and James E. Paine, Salem, has been named architect.

AIRCRAFT EXPANSION—A $5.5-million shop and office building will be erected at Moses Lake, Wash., by Boeing Aircraft Co. Donald M. Drake Co. and George A. Fuller, Portland, Ore., are contractors. Naramore, Bain, Brady and Johnson, Seattle, are architects on the project.

GENERAL ELECTRIC—General Electric Co., Schenectady, N. Y., will build a control equipment plant at Roanoke, Va. Estimated cost is $6 million. Walsh Construction Co., New York, and William Muirhead Construction Co., Inc., Durham, N. C., are contractors. J. E. Sirrine & Co., Greenville, S. C., is consulting engineer.



Both beautiful and honest

This bridge on the Bayshore Freeway in San Francisco, Calif, won a top award in the American Institute of Steel Construction's 26th annual Aesthetic Bridge Competition as one of the most beautiful steel bridges opened to traffic in 1953. Judges said the bridge was "the most imaginative entry because it is an honest structural solution to a difficult and complex problem." It was designed by California Division of Highways and fabricated by Bethlehem Pacific Coast Steel Corp.

Building trades plan peace—and war

AFL convention winds up with boost for construction unions, plans for fight on UCW group

Alan Adams
Washington Staff

As indicated in earlier sessions (ENR Sept. 23, p. 21), the AFL's Building Trades unions came out of the American Federation of Labor's Los Angeles convention with real hope of working out peace plans within its ranks.

The building trades also came out of the meeting with very definite plans for war—but war on John L. Lewis' United Construction Workers, which has been at least a foreseeable threat to the AFL's craft-union organization in construction.

Unanimous approval by convention delegates of president George Meany's long-planned program for ending factional jurisdictional fights in the whole AFL, apart from the building trades, was an added gain for the construction men. The elaborate machinery outlined by Meany for negotiation upward from the local to the national union level—if adhered to—gives some promise that the building trades' occasional battles with other AFL groups (like the teamsters) may be solved quickly, if not amicably.

• **War plan**—The drawing of battle lines against UCW (ENR Mar. 18, p. 29) came rather unexpectedly out of what had been originally reported as an agreement on jurisdictional matters between the carpenters, hod carriers, operating engineers and teamsters.

What it actually is, a close buttonholing of delegates indicates, is a joint plan to attack UCW, backed by what observers said was a "sizeable" war chest. Plans are to go after UCW, first in its stronghold coal field areas in Pennsylvania.

To the surprise of many, the war plan was pushed strongly by the teamsters' powerful Dave Beck—who is in other matters an avowed Lewis supporter. Insiders reported, however, that Beck splits with Lewis on this over a matter close to the Beck heart: He isn't in favor of anyone taking men or jobs away from his truck drivers.

And union chieftains talked of extending the battle against UCW to other phases of construction, after they get going against inroads into the highway and heavy construction fields.

• **Other evidence**—There was plenty of other evidence of a new drive for unity in the construction labor field.

Most interesting was the report that the ironworkers and the electrical brotherhood were already at work—on a local level—to settle their long-standing troubles over job assignments.

According to convention-lobby reports, these talks are drawing near a national agreement. And the machinists are said to be ready to begin parleys to end their own disputes with the ironworkers and the electricians.

• **Strength from floor**—The convention as a whole went to bat on several points for the building trades. The 800 delegates for instance, gave sweeping approval to a proposal for a change in federal law that would prevent employers on federal construction jobs from working employes a 56-hr. week at straight time.

As now written, the law provides overtime pay after eight hours, but doesn't limit the number of eight-hour days to be worked each week at straight time.

And AFL officials assured the building trades that the new disputes program won't affect the trades' long-standing and successful (ENR Sept. 16, p. 28) National Joint Board for Settlement of Jurisdictional Disputes.

In the matter of legislation, the trades veered off from the convention—giving flat notice (ENR Sept. 23, p. 22) that it would seek special legislation on its own that would take construction out from under Taft-Hartley, recognize existing agreements covering benefits and apprenticeship, and the like.

• **Small cloud**—There was a small dark cloud for construction contained in lobby rumor—not action of the full convention.

The cloud concerned the reported move of carpenter officials to bring jurisdictional-dispute boards now operating in New York, Chicago and Boston under the aegis of the National Joint Board.

These three groups—notably New York's 51-year old Building Trades Employers' Assn.—have long and successful records, but their actions have often differed from what union officials would like. Upsets in the long-established procedures could be serious for contractors in cities affected.

• **Odds and ends**—Among the significant announcements at the meeting was plumber Martin Durkin's announcement that his union would provide scholarships for its apprentices so that they may be educated as engineers.

Durkin commented that Russia, for one, is getting ahead of the U. S. in training technicians and engineers. He said the union plan will work this way: Each local will contribute to funds to provide for college and technical training for two apprentices. Apprentice training and education will be carried on simultaneously for the men selected for scholarships.

Labor briefs . . .

• **Who sues who**—Two labor unions found themselves at the wrong end of damage suits. In St. Louis, Mo., NLRB filed an injunction action against carpenters who were accused of interfering with employes of a subcontractor who are members of another union; in Fairbanks, Alaska, the painters union was sued for $1 million damages by contractors, for allegedly restricting the use of paint rollers and spray equipment.

• **Hole dispute**—Carpenters working on the Richland, Wash., chemical plant being built for AEC by Blaw-Knox, ended a fight over who cuts holes for pipe and electrical conduits. Details of settlement weren't immediately revealed—but the dispute revolved around cutting holes in composition siding: electricians had done some of the work, so had carpenters.

• **Urges repeal**—New Jersey's Governor Robert Meyner has before him a special committee report urging repeal of the state's anti-strike law affecting public utility workers. Enacted in 1946 (and amended since) the statute provides for compulsory arbitration and state seizure of struck utilities.

• **Wages**—If you want to compare, here are New York State Department of Labor figures on construction wages in the state: average weekly wage as of July 1954—$104.94 (June was $104.13). In July 1953, average wage was $94.10 weekly. Average hours of work in 1954 were 36.5, compared with 34.9 in 1953.

Building a Grandstand, Stadium, Balcony?

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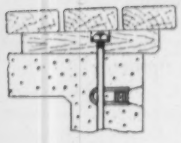
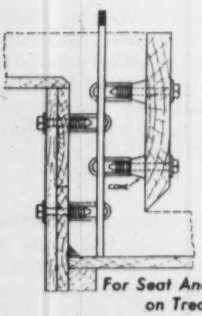
2 *Provide secure anchorage for seat brackets.*





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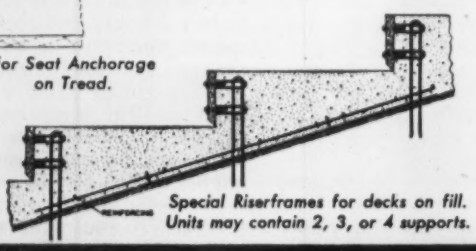

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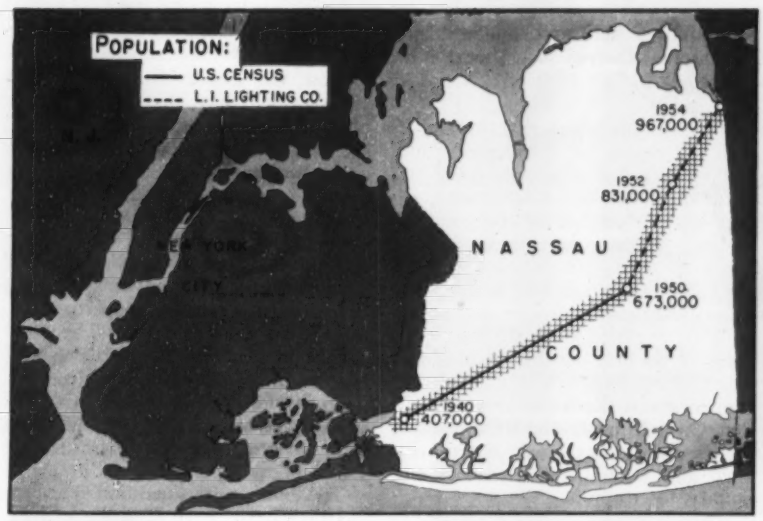
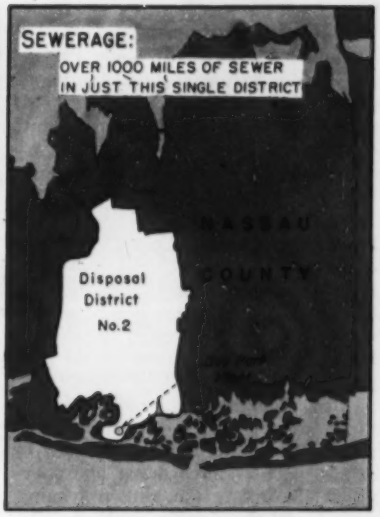




NASSAU COUNTY, N. Y.—In the wake of continuing population boom have come thousands of new miles of sewers.

Sewers on the grand scale

In the New York county where Levitt made mass-produced housing history there is now a sewer construction program, running to $100 million plus, to meet the resulting need

Sewer construction, by its very nature, is usually unimpressive. It rarely looks big or spectacular while under way; and once completed is out of sight—and generally out of mind.

But if ever sewer construction could be done on a grand scale, it is being done on Long Island today.

There is just no minimizing the current sewer construction program of Nassau County, N. Y. Officially and conservatively called a $100 million program of laterals and interceptors, this is only the beginning. When officials talk of $100 million worth of sewers, they mean only the work now well on its way to completion in Sewage Disposal District No. 2, the southwest quarter of the roughly square county. The eastern half of the county may well take another $100 million worth of sewers which are still to be designed.

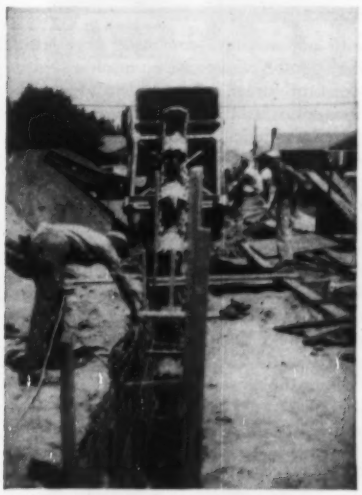
What they are actually doing in Nassau County is finally putting modern plumbing into one of the great "bedrooms" to which New York's commuting millions retire at the end of each workday. It is modernization under pressure of growth. Nassau, just outside New York City's limits, continues to draw people from the metropolitan area while also drawing much light industry (ENR May 14, 1954, p 62).

It is people, whether they only live, or work and live there, who are the compulsion behind Nassau County's current sewer construction. Population of the county has jumped 42% just since the census taker made his 1950 rounds. Long Island Lighting Co.'s 1954 population survey puts the present Nassau County total at 966,841. Its projected growth curve hits the million mark in '55.

• **Miles to go**—In all, there are over 1,000 miles of sewers to be laid in Disposal District No. 2.

(*Continued on page 28*)

NOTHING FANCY—It's just plain sewer construction, but there is so much of it.



PRACTICED CREWS like this one are able to lay 400 ft of sewer per day.

IN WET GROUND—and much of it is wet—wellpoints answer the water problem.

(Continued from page 27)

County Executive A. Holly Patterson is now letting some $14 million worth of sewer contracts a year—as they are processed by the Department of Public Works—being a single contract generally no bigger than $2 million to $3 million.

A shortage of supervisory personnel limits progress on the work. A sewer ordinance passed last year makes it possible for local collection districts to form and finance themselves by assessments against properties benefited. Consultants to the county could produce contract drawings faster, if pressed. Contractors are available for doing more work. But the county insists on its own limited engineering and inspection force doing all supervision of construction, thus restricting itself to 10 or 12 sewer contracts plus perhaps a few pumping stations at any one time.

Despite the limit on progress, there is a lot of sewer mileage being laid. At the beginning of this year there remained only 8 of a total 54.6 miles of trunk sewers to be laid. And the remainder is under contract and due to be finished this year.

Work on the laying of laterals was barely started last year with the construction of 56 miles. Another 147 miles were under contract at the start of this year.

• **Disposal plant came first**—Nassau County has concerned itself with sanitary sewerage since 1934, but it was not until after World War II that plans were completed and a site acquired for treatment works on a south shore marsh at Bay Park. Ground was broken in June, 1949, and the $9.5 million activated sludge plant for Disposal District No. 2 went into operation in 1951 (ENR May 3, 1951, p 32).

It is to this plant that the more than 50 miles of interceptors and 1,000-plus miles of laterals will lead. Ultimately the plant will treat 54 mgd—more than half of the county's sewage. Right now it receives only about 10 mgd, plus trucked-in cesspool cleanings amounting to less than a million gallons a day.

With completion of the Bay Park plant it became possible to abandon small village-owned sewage works in four locations (Rockville Center, Garden City, Mineola and Hempstead). In these instances sewer systems existed and were merely tied into the county interceptors.

• **Interceptors followed**—The interceptors were designed by Harold Sherman, now deputy commissioner of the County Department of Public Works, with advice of consulting engineer Richard H. Gould.

The laterals are being handled differently, and this, briefly, is the process.

The county has engaged three different consulting firms to handle separate portions of the big Sewage Disposal District No. 2. They are Henry W. Taylor of Freeport, L. I., C. MacCallum of Port Washington, L. I., and Nussbaumer, Clark & Velzy, Inc., New York and Buffalo.

A consultant, assigned an area outlined as a collection district in the county's general plan, makes a study. The study concludes with a report setting forth a plan for the collection district—exact boundaries, lateral sewer layout, design features, and estimated cost.

Next, the County Board of Supervisors—which has the authority to plan and construct the county's sewerage system—studies the report, holds a public hearing on it, and finally passes an ordinance creating the collection district.

• **Collection districts handle laterals**—Cost of the lateral sewer system is borne by the assessable property within the collection district. The consultant goes to work on contract drawings. And eventually construction contracts for laterals are let. County supervision of construction limits the rate at which contracts are let—as stated above.

The communities mentioned as previously sewered have been serviced by the county system, since 1951, when Bay Park plant began operating. First areas to be sewered under the present program were Valley Stream and Baldwin. Franklin Square followed and is now nearly half sewered. A New Hyde Park collection district recently has been created. An expanding area of light industry on what was Roosevelt Field—from which Charles A. Lindbergh flew the Spirit of St. Louis to Paris in 1927—has been tied into the system. And so it goes; it's a constant growth.

• **Construction is straightforward**—No outstanding new sewer construction techniques have evolved in the Nassau County work. A high groundwater table in many areas has meant wet trench, but rather extensive wellpoint operations have been the answer to that. Steel sheetpile was resorted to at only one deep point on the interceptor sewer.

Here and there on some laterals it has been necessary to take out meadow bog and fill bad ground with crushed stone. All trunk lines and some laterals are on cradles, but most laterals are laid on the good sand generally found on Long Island. Only on the 84-in. outfall from Bay Park plant were pile bents required to support pipe. This outfall line carries plant effluent a distance of 2½ miles out to 200-ton precast concrete dispersion chamber.

Pipe sizes range from 18 to 84 in. on interceptors; from 8 to 18 in. on laterals. Minimum grade for laterals is 0.35% for vitrified clay and 0.25% for asbestos cement pipe.

One aspect of the work complicates it considerably. About 90% of all laterals are going in after other utilities are all in place. Sidewalk areas are used where possible, but generally the sewer lines are being put into paved streets. It has been a case of searching

Air photos get first sewer application

A "first" is claimed by one of the consultants to Nassau County in its current lateral sewer construction program: a new application of topographic maps prepared from aerial photography.

Faced with more survey work than he had force to handle, Charles R. Velzy of Nussbaumer, Clark & Velzy, Inc., looked for help. He went to Lockwood, Kessler & Bartlett, Inc., engineers and surveyors, with the idea of hiring some field survey help.

It didn't take LK&B's president, Ford Bartlett, long to convince himself that what Mr. Velzy wanted were aerial maps. When told what aerial maps could do for him, Velzy, too, became convinced and ordered maps made.

Maps were made up in 200-ft-to-the-inch scale with 5-ft contour intervals for establishing boundary lines of sewer collection districts and properties within them, as well as for layout of the laterals.

Then aerial photographs at 50-ft scale with no contours were made from which the photogrammetrist's machine drew strips of street, showing curb-lines and essential control features such as sidewalks, driveways, poles and trees. And here is where Velzy feels he profited by first application of an idea. Surveyors were sent into the field with these machine-made strip drawings, instead of notebooks. Field data, sewer centerline and profile, were noted right on the machine-made pencil drawings instead of being tabulated and sketched in the usual surveyor's notebook. The survey party would then send the drawing, completed with their survey measurements, back to the office for ink tracing. The tracings became the contract drawings from which laterals are being built.

Areas concerned here are considerable. There were 3,500-acres flown and mapped for Franklin Square collection district, 2,400 acres for Floral Park, 4,000 acres for New Hyde Park, 2,500 acres for Oceanside.

for a place to put sewers among other utility lines. The practice is to bring house connections to the curb-line; the homeowner completes the connection.

Where clay pipe is used on this extensive lateral work, the type varies with depth as follows: For depths 4½ ft and less, standard pipe is encased in concrete; 4½ to 6 ft, extra strength is used; 6 to 10 ft deep, pipe is standard; deeper than 10 ft, it reverts to extra strength pipe. In depths over 16 ft concrete cradle is used.

• **Materials choice significant** – It is noteworthy that on all lateral sewer work in wet ground–about 30% of the work let so far–asbestos cement pipe has been specified for the advantages of its longer lengths, fewer joints and tightness of joint (ENR Dec. 21, 1950, p. 45). Its sleeve joint can be made in the wet and is relatively tight against infiltration of groundwater. Early tests in Freeport, L. I., showed leakage to be about one-quarter of the allowable 1,000 gal per mile per inch diameter per day.

Still specified exclusively for wet ground, the asbestos cement sewer is now often specified as an option at the same price as clay in dry ground. Contractors sometimes choose to use the asbestos cement pipe–despite a possible 50-cent-per-foot price difference. It is even being used for house connections.

All manholes are now being built of 4-ft dia. precast pipe sections placed on either precast or poured-in-place bases.

• **Experienced constructors**–When a contractor can keep crews steadily busy laying sewers, he can develop an efficient operation. Daily progress figures don't mean too much without all their qualifications of trench depth, pipe size, crew size, trencher type, etc. But it is somewhat indicative that up to 400 ft per day have been laid and backfilled on current lateral work.

Many contractors are interested in bidding this work; among those who have completed or are working on one or more are: Hendrickson Bros. of Valley Stream, L. I., T. & T. Contracting Co. of Brooklyn, Tulley & Di Napoli of Flushing, Delhan Const. Co., Brooklyn, Andrew Catipano & Co., Glendale, N. Y., De Marco & Ciccone, White Plains, N. Y., Merritt, Chapman & Scott, New York City, and Zarra Const. Co. of Westbury, N. Y.

For Nassau County, J. C. Guibert is commissioner of public works. Harold Sherman and D. K. MacKenzie, deputy commissioners, are in direct charge of the work.

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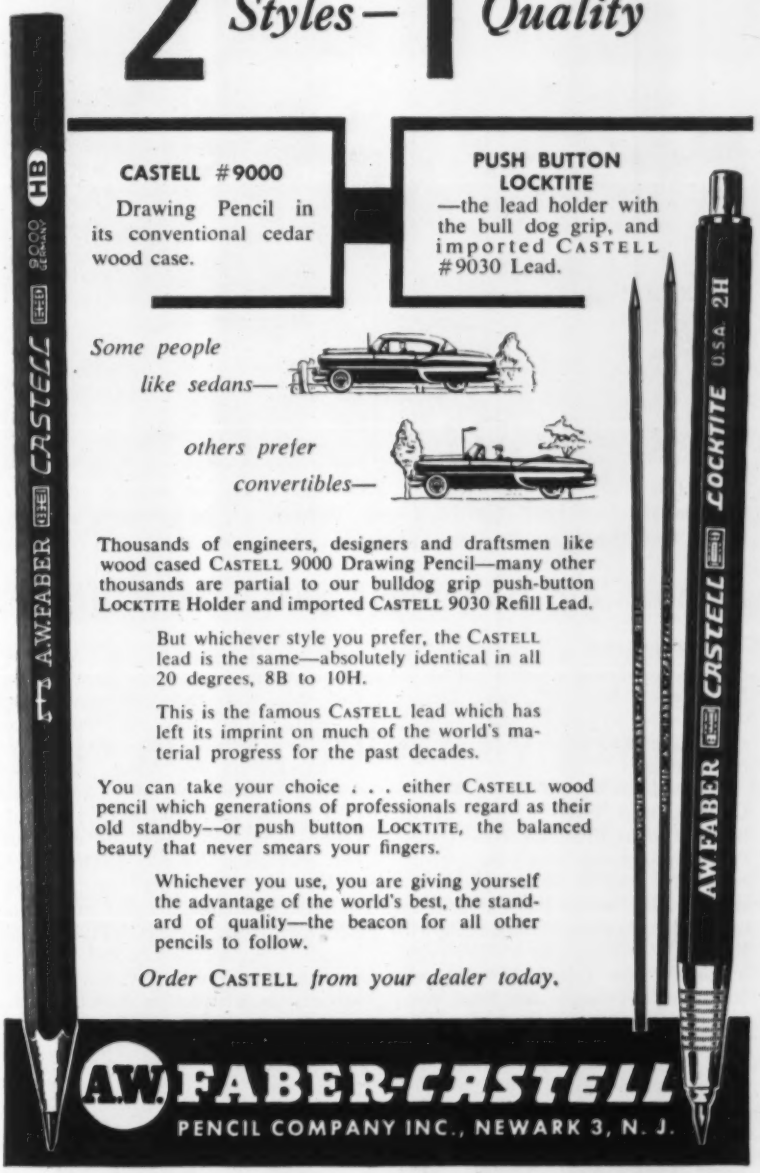

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NEW JERSEY'S FIRST CONCRETE PAVEMENT was put down in 1912. It was 6 in. thick and from 14 to 18 ft wide. Widening for the resurfacing had been started when this picture was taken.

Famous old pavement gets a face lifting

After 42 years of service, the first concrete pavement constructed by the New Jersey State Highway Department has been replaced by a new pavement, also of concrete, built to modern standards.

Located on Route 24 in Warren County, near New Village, in the heart of what then was New Jersey's cement-producing area, the original mile-long stretch of pavement was laid in 1912 under the watchful eye of Thomas A. Edison who, along with Edwin A. Stevens, the highway commissioner, was convinced that portland-cement concrete had great possibilities for highway paving. All labor and material costs were paid for by the state, with the exception of the cement, which was contributed by three local cement companies, namely, Alpha, Edison and Vulcanite. Edward W. Kilpatrick, now chief engineer of the New Jersey State Highway Department, supervised the work for the contractor, Salmon Brothers.

The pavement just replaced was not the first concrete pavement constructed in this country. That honor is generally conceded to belong to a pavement laid in 1898, and still in service, on a street in Bellefontaine, Ohio. And the first rural highway pavement is believed to be one laid in 1909 in Wayne County, Michigan.

Plans for the original concrete pavement in New Jersey called for a uniform thickness of 6 in., and for various widths ranging from 14 to 18 ft, without a longitudinal center joint. There was no reinforcing steel. Transverse expansion joints were installed at intervals ranging from about 25 to 100 ft. In the main, however, the interval was 30 ft.

Specimens recently removed from the pavement showed the concrete to be of exceptionally good quality, and to have a compressive strength averaging about 8,300 psi.

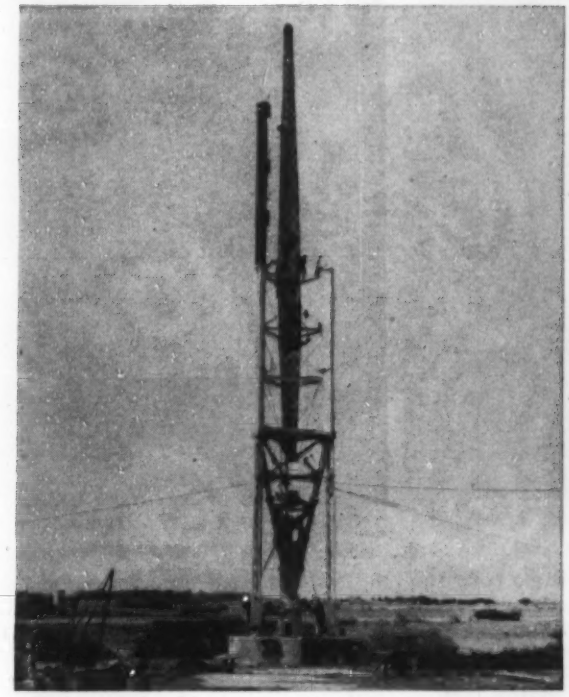
That pavement was laid directly over an existing macadam pavement about seven years old that had undergone serious failures during spring seasons due to frost action.

Several years ago a strip of bituminous pavement was added along one side to increase the width to correspond with adjoining sections. In the course of time, owing to the combined effects of heavy traffic and a subgrade soil adversely affected by frost action, rather extensive and serious cracking occurred.

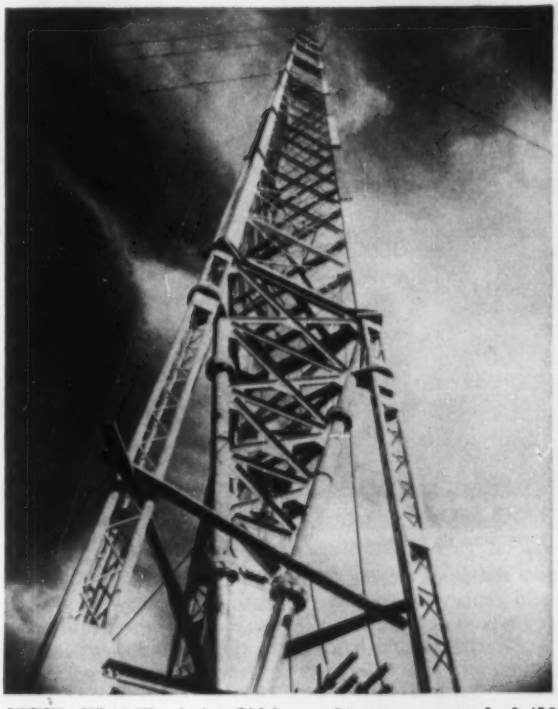
In the replacement work the original pavement was widened with concrete to 24 ft to provide a uniform base, then a layer of bank-run gravel having a minimum thickness of 3 in. was spread over the entire area to even out irregularities. On this, the new 9-in. reinforced concrete pavement was laid. Shoulders are bituminous penetration gravel 8 ft wide.

This work was done by the Franklin Construction Company, under the direction of Thomas F. McDonald. Emil C. Benoist was resident engineer for the Highway Department.

TWO SECTIONS OF THE ORIGINAL PAVEMENT (the darker rectangles in this picture) were embedded flush with the surface of the new pavement. Thus part of that pavement is to be kept in service. It will be appropriately marked.



UNIQUE GIN POLE erected a record-height TV tower, using its own power system to hoist itself up the frame.



STEEL FRAME of the Oklahoma City tower extends 1,420 ft above the ground ready for antennas.

Self-raising gin pole erects tallest TV tower

As it erected the steel members of the world's tallest structure—a guyed tower for Station KWTV in Oklahoma City—an 82-ft gin pole, self-powered with electric motors, hoisted itself up the steel frame. Its movement was controlled by an operator on the rig. At the top of the tower, it placed two antennas to establish a height record of 1,572 ft.

The structure is 100 ft taller than the Empire State Building plus its TV antenna, which formerly held the height record. Emanating from this great height, KWTV telecasts will cover an area of over 27,000 square miles.

• **Unique rig cut erection time**—The traveling gin pole, which made possible erection of the 650-ton steel frame in only nine weeks, is of tubular steel truss construction. Weighing 12,500 lb, it is 3 ft square in cross section and 82 ft long, but can be extended to 102 ft. It cost $20,000.

The rig incorporates in its interior three winches, three electric motors and reduction gears that permit the operator to reduce control line speeds to as low as 2.5 fpm. Riding on a platform on the side of the gin pole, he can thus position the rig accurately and carefully. A four-way telephone hookup keeps him in constant touch with the erection superintendent, load-line winch operator and tag-line winch operator on the ground.

When erecting steel, the gin pole was supported in the interior of the tower by cables tied to the tower frame.

To rise to a higher level, the rig reeled up on the cables, powered by its own electric motors.

• **24 guys brace tower**—The TV tower is of steel truss construction, with X-braced panels 10 ft high extending the entire height of the frame. Triangular in cross section, it is 12 ft wide along each face. It is pinned at the base, 9 ft above the ground, and braced by six guys at each of four levels—290 ft, 650 ft, 1,040 ft and 1,340 ft above the support.

At these levels, two guys fan out at an angle of 120 deg with each other from each of the three tower legs and in line with the tower faces. Bottom guys are anchored 520 ft from the tower base, whereas the remainder end up 950 ft from the base.

Made of galvanized bridge strand, the guys vary in diameter from 1¼ to 2 in. Concrete anchor piers for the guys are 26 ft square by 10½ ft deep.

The tower is founded on a hexagonal concrete pier and footing. The pier is about 19 ft wide and 7½ ft deep, while the footing is about 28 ft wide and 2½ ft deep.

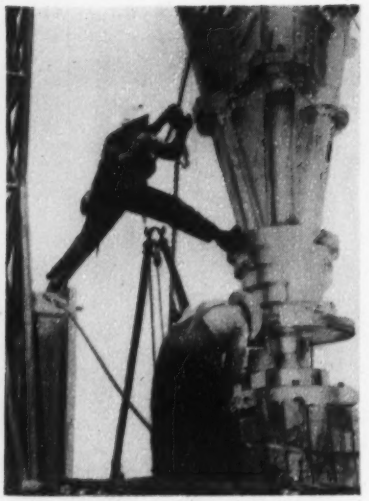
• **Porcelain tubes support tower**—Both the tower and its guys are insulated from the ground, to avoid interference with signals originating from other TV stations in the immediate area. Insulators for the steel frame, interposed between the steel bearing plates on which the tower rests and the foundation, consist of a circular cluster of twenty-one 4-in. dia vertical porcelain tubes, which have a crushing strength of 5,600 tons, as compared with an estimated working load of 1,400 tons.

The insulators are capped with thick steel plates. A pin connection between the steep cap and the tower bearing plates prevents transmission of bending moment from the tower frame to the porcelain tubes, so that they are subjected only to compressive stresses.

• **Variety of shapes used**—To transmit loads to the pin connection, the tower is tapered almost to a point along its bottom 31 ft. The three legs of this tapered base are steel rounds about 10 in. in diameter. Three auxiliary legs, of truss construction, surround the base, to pro-

(*Continued on page 32*)

1 INSULATORS composed of vertical porcelain tubes were placed between the tower and its foundation. The tower is pinned to this support.



2 BASE-SECTION BOTTOM was set on a steel cap atop the insulators.

vide a means of jacking up the tower should replacement of the insulators ever become necessary.

Above the tapered base, up to the 300-ft level, the three legs of the tower are vertical 14-in. 320-lb wide-flange beams. In the upper part of the frame, the legs are solid steel rounds, varying from 8 in. to 4 in. in diameter. Horizontal and diagonal bracing consists of steel angles and solid rounds.

The tower was designed for a 40-psf wind pressure on flat surfaces up to the 780-ft level. Above, the design wind load was 60 psf on flat surfaces, 40 psf on rounds.

• **Erection procedure**—Erection was accomplished with a 13-man crew and with a variety of equipment, including the self-raising 82-ft gin pole. Insulators and steel cap were positioned on the foundation with an A-frame and power winch mounted on a truck. The tapered base section was assembled on the ground in two parts—one about 20 ft high with base plates attached, the other 10 ft high—and placed on the insulator cap by a 92-ft-high gin pole mounted on the tower foundation. Temporary guys were strung to brace the tapered base after its two parts were bolted together.

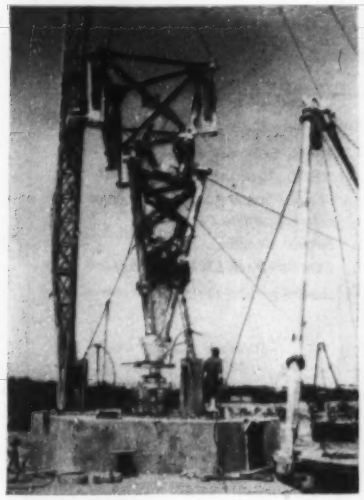
Above the base section, the frame was erected in 30-ft lengths. All field connections were made with galvanized structural ribbed bolts, which were driven into the holes, and further secured with galvanized locknuts having U. S. standard threads. Gusset plates for connecting the bracing to the legs, and flange plates for splicing the legs, had been welded to the legs in the fabricating shop. Use of a newly developed electrode having a refractory coating into which powdered iron had been mixed speeded up the welding.

• **Gin pole erected gin pole**—The 92-ft gin pole erected the first 30-ft length of the tower legs. It also lifted the bracing in a basket. Finally, after the bracing was bolted to the legs, it placed the 82-ft traveling gin pole inside the tower, and the self-raising rig completed the frame.

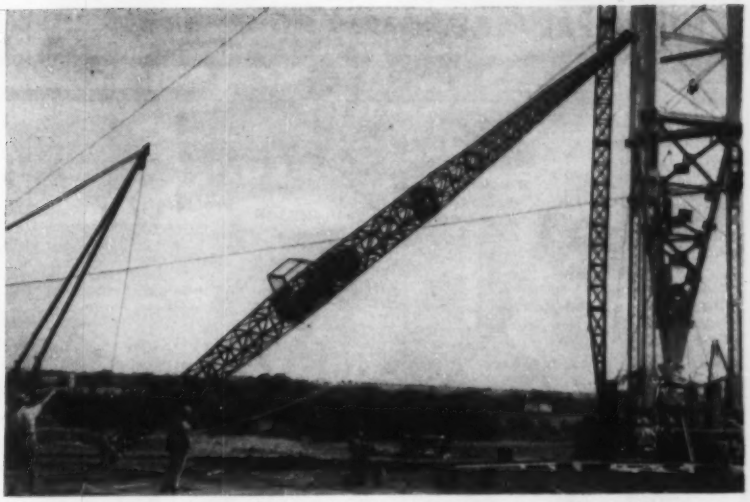
Up to the 300-ft level, the heavy beam sections forming the legs were erected first. Then, the bracing was lifted in a basket and bolted into place. Above the 300-ft level, however,

WELDING OF GUSSETS to tower legs was speeded by use of new type electrode.

WINCH OPERATOR communicated with other crewmen over four-way telephone hookup.



3 BASE-SECTION TOP was erected with a 92-ft gin pole.



4 TRAVELING GIN POLE, incorporating electric motors and winches for propelling itself up the frame, was positioned in the tower by the 92-ft gin pole.

the legs were lighter and easier to handle. So a faster erection procedure was adopted.

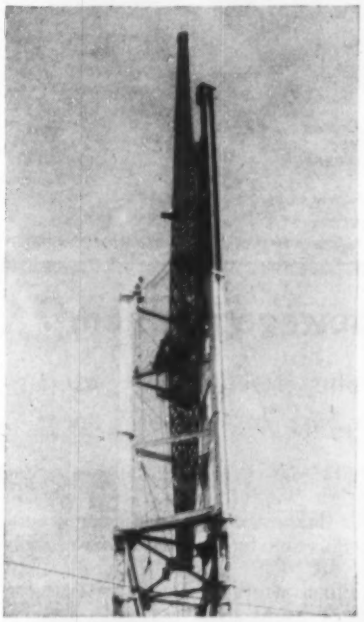
Each 30-ft section for the upper part of the tower was assembled on the ground in two parts. One part consisted of two rounds and the bracing between them. The second was composed of the remaining leg and the other two bracing systems. The two-leg section was erected first; then the single-leg section was bolted to it. With this procedure, the erectors set steel at the rate of 90 ft per day. Heaviest lift during this phase was about 9 tons.

• **Antennas set record height**—The two antennas—one 100 ft high, the other, 73 ft—were erected in three steps: (1) A 12,355-lb section of the lower antenna was positioned; (2) A 15,350-lb center section of that antenna was placed on top; (3) The top section and the entire upper antenna, with a combined weight of 12,477 lb, was attached, to bring the total height of structure to 1,572 ft, setting a new world's record. For this final lift, the traveling gin pole was clamped to the outside of the tower, because the lower 21 ft of the bottom antenna is inside the structure.

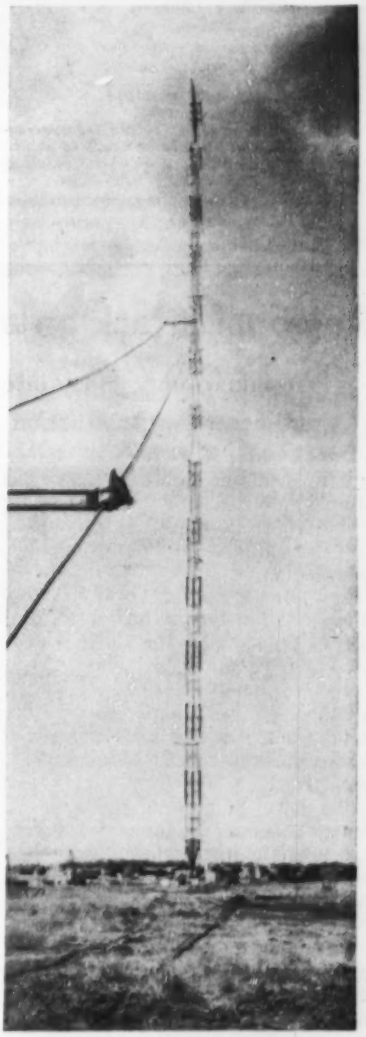
All tower parts, including nuts, bolts and washers, had been hot-dip galvanized and then primed for painting in the shop. A field coat was sprayed on tower parts on the ground at the site. Painting was done in accordance with Civil Acronautics Administration requirements, which call for alternate 30-ft-wide bands of orange and white —to make the tower easily visible to aircraft in daylight.

Eleven platforms were incorporated at intermediate levels in the tower to provide work areas for service and maintenance crews. An electric elevator was installed to serve up to the 1,340-ft level. The tower also was equipped with nine 1,000-w flashing beacons and 18 obstruction lights.

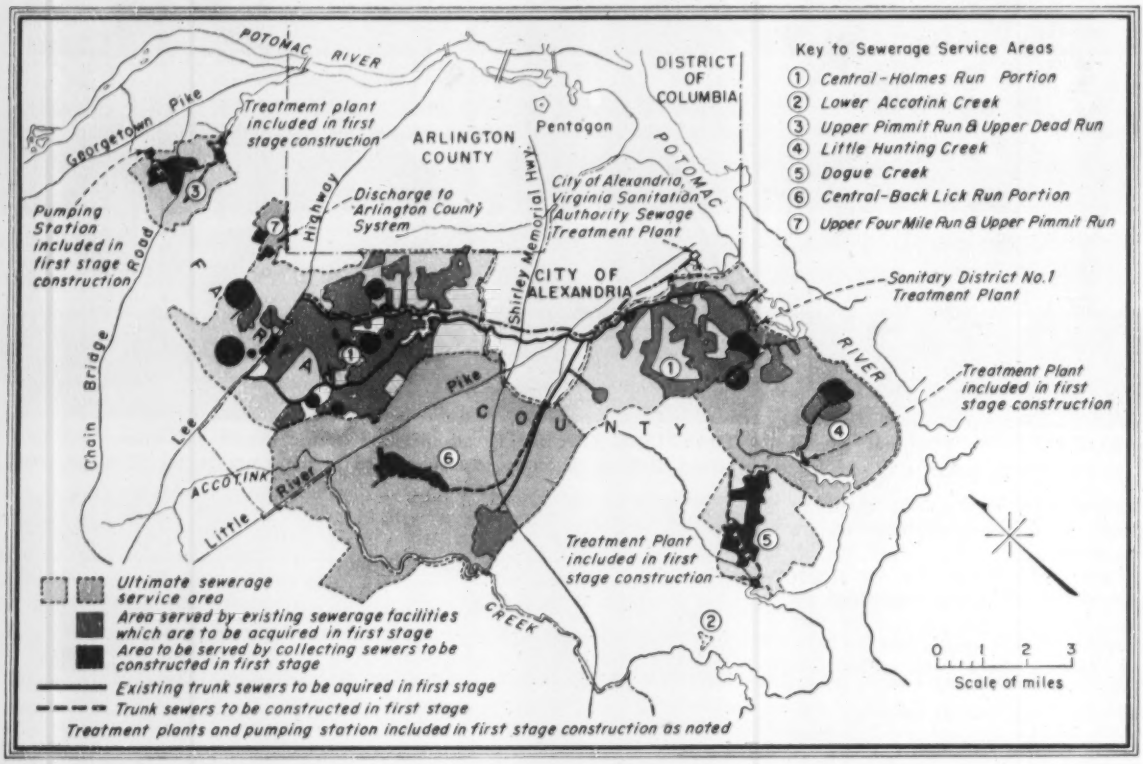
The structure was designed by R. A. Vaughan, chief engineer, Orville Pelkey and James Welsh of the Ideco Division, Dresser-Stacey Co., Columbus, Ohio. Ideco fabricated the steel but subcontracted erection to Mizell Construction Co., Ganado, Texas. Leonard Mizell, president of the subcontracting firm, designed the self-raising gin pole.



5 HEAVY-BEAM LEGS were erected first by the cable-supported gin pole in the lower part of the tower, then bracing; in the upper portion, legs and bracing were lifted partly assembled.



6 BRACED BY GUYS, the orange-and-white TV tower rises higher than the Empire State Building.


POTOMAC RIVER
DISTRICT OF COLUMBIA
Georgetown Pike
Treatmemt plant included in first stage construction
ARLINGTON COUNTY
Pentagon
POTOMAC
Pumping Station included in first stage construction
Highway
Discharge to Arlington County System
City of Alexandria, Virginia Sanitation Authority Sewage Treatment Plant
Shirley Memorial Hwy.
CITY OF ALEXANDRIA
Sanitary District No.1 Treatment Plant
Chain Bridge Road
FAIRFAX
COUNTY
RIVER
Treatment Plant included in first stage construction
Pike
Lee
ACCOTINK
River
Little
Treatment Plant included in first stage construction
CREEK
Key to Sewerage Service Areas
1 Central-Holmes Run Portion
2 Lower Accotink Creek
3 Upper Pimmit Run & Upper Dead Run
4 Little Hunting Creek
5 Dogue Creek
6 Central-Back Lick Run Portion
7 Upper Four Mile Run & Upper Pimmit Run
Ultimate sewerage service area
Area served by existing sewerage facilities which are to be acquired in first stage
Area to be served by collecting sewers to be constructed in first stage
Existing trunk sewers to be aquired in first stage
Trunk sewers to be constructed in first stage
Treatment plants and pumping station included in first stage construction as noted
0 1 2 3
Scale of miles

Regional attack on a sewage problem

Virginia county plan, integrating seven district systems, outlines new construction on basis of long-term needs

Sale of a $10 million bond issue late last month put the Fairfax County, Va., Board of County Supervisors in business with an outstanding example of a regional attack on a sewage disposal problem. There are now funds in hand for the first stage of a project embracing seven districts and ultimately to cost $17.1 million.

Fairfax County, located in northern Virginia, on the Potomac River, is in a rapidly developing area embracing residential, commercial and industrial properties.

To solve its growing problems of sewage disposal, an integrated sewerage program for Fairfax County has been evolved by Alexander Potter Associates, consulting engineers of New York City. Their engineering report indicates that the seven-district plan as set forth can be financed through sale of $17.1 million in bonds. Authorization for sale of $20 million in bonds was given by voters of the county in a special election held last December.

The initial issue of $10 million in Sewer Bonds (Series A) will provide for the cost of construction and land acquisition for the first of two stages of the county program. The next $10 million worth of bonds is expected to be issued about next July—depending on rate of progress in the first-stage.

• **Extent of 1st stage**—In the first stage of the plan, proceeds from the sale of Series A Bonds will account for the following:

Collecting sewers	$1.7 million
Trunk and Sub-trunk sewers	$1.7 million
Pumping stations	$ 80,000
Three treatment plants	$900,000
Miscellaneous equipment & facilities	$ 39,000
Lands and Rights-of-way	$ 65,000
Contingencies	$507,000
Acquisition of facilities of the district including redemption of outstanding bonds of the district	$3.1 million
Acquisition of other existing facilities	$500,000
Legal, financial, engineering, administrative and other expenses	$679,000
Interest during construction (two years)	$700,000

Contracts in excess of $1.5 million in sewer construction already have been let for portions of the first stage of construction, and they have totaled slightly less than the consultant's estimates.

Under the accepted plan, the project will consist of several systems that will be administered by the county as a unified operation. The county will acquire the sewerage facilities of Sanitary District No. 1, which contains 164 miles of the 186 miles of existing sewers; 11 of the 12 pumping stations; 3.6 miles of the 3.7 miles of force mains and two of the 10 treatment plants.

It also will acquire most of the privately-owned sewer systems that are now in operation within the various service areas.

The three treatment plants to be built will serve Upper Pimmit Run and Upper Dead Run (No. 3 on the map), Litfle Hunting Creek area (No. 4) and the Dogue Creek area (No. 5 on the map).

Under an agreement with the City of Alexandria Sanitary Authority, treatment of a large amount of District 1 sewage will be provided in the authority's new treatment plant for which contract bids were received this month. This treatment plant will provide biofiltration with an estimated BOD removal of between 75 and 80%.

Here is the extent of the project—Sewers to be constructed:

Service area	Map No.	Area served Sq miles	Mi. of collect sewers	Mi. trunk & sub-trunk
Central System	1	24.00	30.15	16.42
Lower Accotink	2	0.01	....	....
Upper Pimmit Run & Upper Dead Run	3	3.10	11.65	4.20
Little Hunting Creek	4	10.00	24.49	5.83
Dogue Creek	5	4.80	19.72	6.95
Central System (Back Lick Run)	6	21.60	40.81	22.37
Upper Four Mile Run & Upper Pimmit Run	7	0.60	2.41	0.18
			129.23	55.95

• **Design Capacity**—Sewage treatment plant structures will be built on sites with sufficient space for future expansion with an initial design capacity for a period of 15 years.

Sewers, on the other hand, because of the comparatively low additional cost of adequate installation initially, as against installation of supplemental lines later, are being designed to carry peak flows through the year 2,000.

• **Stage two**—The second stage, to be financed through sale of an estimated $7.1 million principal amount of authorized bonds, will complete the service for those additional areas shown on the map.

Various trunks and collecting sewers and sewage treatment and disposal facilities are to be constructed and acquired as there is sufficient population density to support these facilities.

Morris H. Klegerman, who directed the study for the consulting firm, set forth the following recommendations as a tentative schedule of service charges.

(A) For single family dwelling units:

(1) An annual service charge of $39.00 per single family dwelling.

(2) An availability charge of $40.00 per single family dwelling.

(3) A connection charge of $4.00 per front foot of property served (with a minimum of $200 and a maximum of $400).

(B) For multiple dwelling units, business, commercial and industrial properties:

Annual service charges, availability charges and connection charges consistent with the service to be rendered and not less than the charges set forth for single family dwellings.

(*Municipal continued on page 38*)

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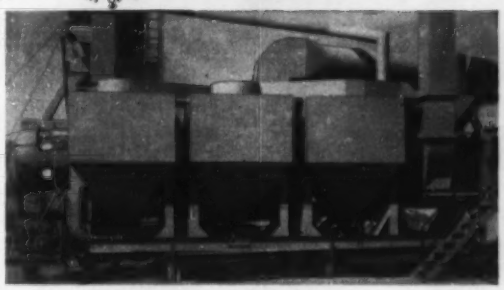

Here is a MADSEN 380 Dust Collector Unit, complete with No. 80 Exhauster and Caterpillar D-318X power unit. MADSEN Dust Collectors are built in one, two and three cyclone units for use with all batch or continuous type asphalt plants.

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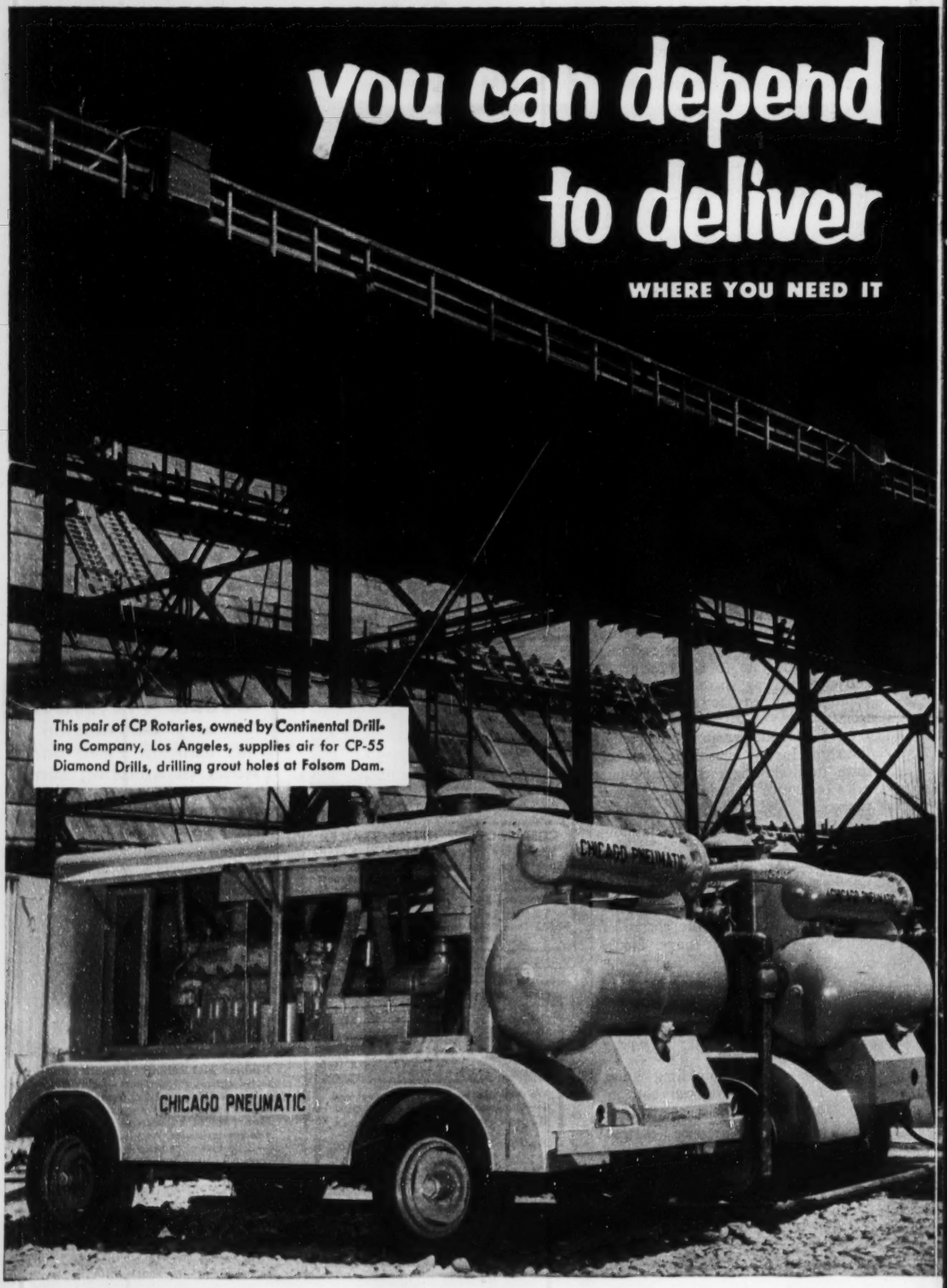
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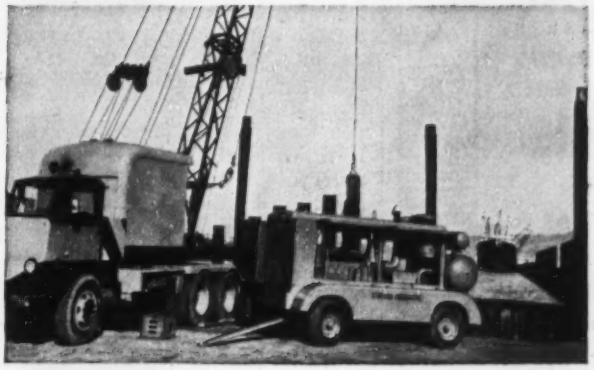
◀ Here's another team of CP Rotaries. This time they're ganged up to meet air demands at a power project in North Carolina.



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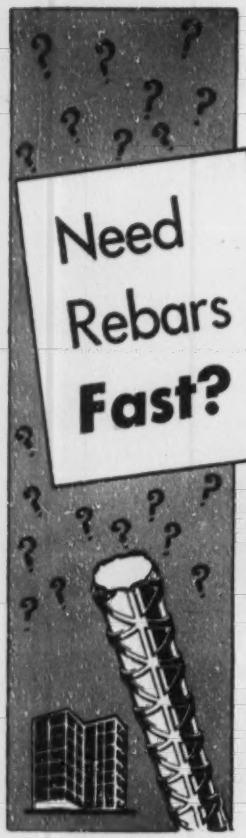

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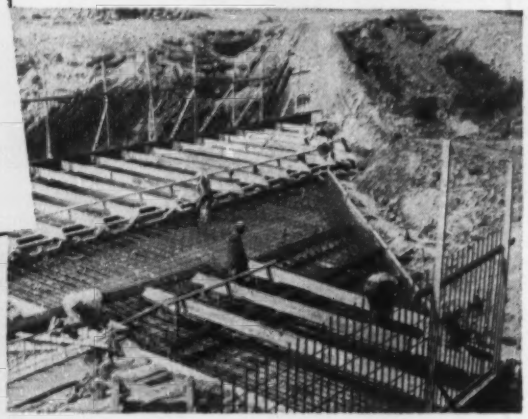

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MUNICIPAL

Penn. starts incentive plan for sewage treatment works

Pennsylvania communities are beginning to receive benefits under a $2 million state aid program designed to spur construction of municipal sewage treatment works. Some 116 communities are due to participate in the incentive system (ENR Aug. 6, 1953, p. 24).

The state health department has sent out its first batch of checks, $186,000 worth, to Bethlehem, Sunbury, Middleburg, Phoenixville, Norristown and Altoona. But that was only a beginning.

"Checks are being sent out as soon as we can clear them", said J. R. Hoffert, chief engineer of the Sanitary Water Board, which is charged with administering the anti-pollution program.

The 1953 legislature set aside the $2 million grant to help push construction of sewage treatment plants after towns throughout the state protested that they needed financial help in their assignment to clean up Pennsylvania streams.

Plants built since September 1, 1937, are eligible for state aid in the amount of up to two percent of their approved construction costs. Communities had until last January 31 to file applications for aid under the new scheme.

Denver considers proposals for airport luxury hotel

Denver, Colo., city officials indicate that a decision may be near on proposals by four developers for construction of a $2-million, 100-room luxury hotel at Stapleton Airfield, Denver's municipal airport.

Among those seeking the project is Hyatt Von Dehn of Los Angeles, operator of Hyatt House Hotels. He has opened a hotel at Los Angeles Airport and is building another at San Francisco. Another proposal has been made by B. B. Harding, Denver real estate man associated with Webb & Knapp, New York realty firm. Others have been made by Tom Moore, Denver architect and Richard Voigt, associated with the Van Schaack Realty Co., Denver.

Thomas P. Campbell, manager of improvements and parks, said if the city decides to permit construction of the hotel, it will advertise for bids. The city would retain ownership of the land and would take a percentage of the gross revenue. The builder would operate under a lease.

BUILT 60 YEARS AGO and still the key to Bombay's water supply, Tansa Dam was in danger of failure, but . . .

Tying dam down with steel cables averts Bombay water supply disaster

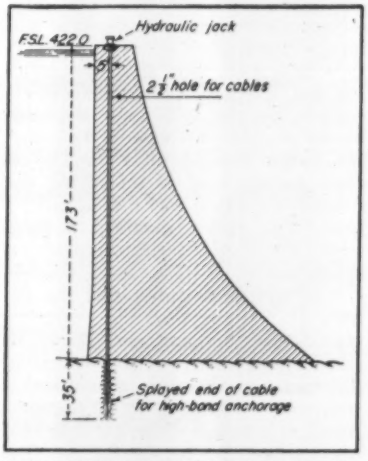
City engineers of Bombay, India, are convinced that the strengthening with post-tensioned cables of their 173-ft high, hand-placed-masonry Tansa Dam, whose reservoir provides Bombay with 90% of its water supply, has taken place in the nick of time.

Theoretically unstable under a full reservoir, the 60-year-old dam was subjected to strengthening in fear of a season of above normal monsoon rains. And such a season has just occurred, for on Sept. 1 the rainfall since May topped the 118-year-old record of 114 in.

Begun three years ago on the recommendation of André Coyne, French dam authority, the job (ENR July 5, 1951, p. 54) has cost $2,250,000, which is a quarter of a million above the original estimate, but considered well worth the price. Mr. Coyne has acted as consultant while the job has been under way, and the method used—anchoring the dam structure to its foundation with high-tensile steel cables—has been of his own design. It was used with success in 1935 on Cheurfas Dam in Algeria.

The method consists in drilling holes (in this case 2¼ in. in diam) through a dam from its crest well down into the foundation rock. Then steel wire cables, with their lower ends splayed for better bond, are inserted in the holes and grouted into the foundation. Next, hydraulic jacks mounted on top of the dam tension the cables (and compress the dam), after which the cables are grouted in for their full length.

Coincident with the repair of Tansa Dam, Bombay has been building an additional dam on a neighboring stream and connecting its reservoir to Tansa with a tunnel. This new structure, Vaitarna Dam, will be completed this year. Already finished is a new 96 in. diam pipeline, 46 miles long, from Tansa into the city, so that by next year Bombay will have an adequate water supply for the first time in many years. It has been getting along on from 70 to 95 mgd (depending on how well the monsoon rains filled Tansa reservoir), whereas its population growth, from 1.5 million in 1941 to 2.8 million in 1947 to 4 million today, has now upped its requirements to over 200 mgd.



HOW POST-TENSIONED steel cables anchor dam to foundation and increase overturning resistance.

Water cover insulates roof of new Australian factory

The factory being built by Whitehall Pharmacal Co. at Parramatta, New South Wales, will have a feature unique in Australia: a roof insulated by a permanent cover of 6 in. of water.

By reflecting the sun's rays in the summer and holding warmth in the winter, the water reportedly will cut the transmission of heat through the roof by 75%.

The roof itself will be of concrete, 6¾ in. thick, with 1½ in. of bitumen. Its 50,000-sq ft area will store some 290,000 gal of water, chemically treated to prevent vegetable growth and repel mosquitoes.

The plant, which will cost about $225,000, is expected to be completed within a few months.

Lebanon allots funds for Litani River plan

Lebanon has allocated $5 million to start work on the $100-million scheme to utilize Litani River waters for irrigating some 49,000 acres of land and generating 626,000,000 kwh of power.

Development plans call for construction of Karaoun Dam and Reservoir on the Litani River and diversion of part of the water through the Lebanon Mountain Range into the Bisri River basin. A low dam on the Bisri River and Khardale Dam on the lower Litani will be built to regulate the flow from Karaoun.

Initial work will cost $33 million. It will involve construction of (1) the first stage of Karaoun Dam and Reservoir; (2) Sohmor Tunnel and power plant below Karaoun Dam; (3) Bisri Tunnel through the Lebanon Mountain Range; (4) Bisri power plant with two units below Bisri Tunnel; (5) the Bekaa irrigation unit consisting of 14,000 acres in an area above Karaoun Reservoir.

Hindrance of performance

"It is an implied condition of every contract that neither party will hinder the other in his discharge of the obligations imposed upon him nor increase the cost of performance. Sunswick Corporation of Delaware v. United States, 1948, 75 F. Supp. 221, 109 Ct. Cl. 772; York Engineering & Construction Co. v. United States, 1945, 62 F. Supp. 546, 103 Ct. Cl. 613."[1]

In the above case, the action was brought by the contractor to recover for the increased cost of the work resulting from the contractor being forced to pay his workmen more than the standard wages being paid in the area where the work was being done and for the payment of overtime wages as a result of sharp competion that was present in the labor market for that area.

The court denied the contractor any recovery as there was no evidence that the university for which the work was being done created the condition that caused the increased cost of the work, nor was there any evidence to show that the university in any way hindered or interfered with the performance of the work by the contractor.

(1) Lesh v. Trustees of Purdue University, 116 N.E. 2d 117, Appellate Court of Indiana, Dec. 18, 1953.

Architect's compensation

Where an architect is employed to prepare plans and specifications the cost of which is not to exceed a specified cost, the architect is entitled to compensation for his services where the cost in excess of the stipulated amount resulted from changes made in the plans at the request of the owner.[1]

The court in its opinion stated: "Of course, if plaintiff [architect] was told that he must produce plans for a house which would not cost more than $18,000 and it could be shown that the plans which he did produce could not have been carried out without the expenditure of substantially more than that amount, he would not be entitled to his fee, for it is well settled that where, in such a contract, there is an understanding as to the limit which is to be spent and it is shown that the plans produced cannot be carried out without the expenditure of an amount substantially in excess of that limit, the architect is not entitled to his fee. It was so held in Rosenthal v. Gauthier, La. Sup., 69 So. 2d 367, 368."

The court in its opinion, also referred to the following cases to sustain this principle of law: MacDonnell v. Dreyfous, 144 La, 891, 81 So. 383 and Andry & Feitel v. Ewing, 15 La. App. 272, 130 So. 570.

(1) Bruno v. Gauthier, 70 So. 2d 695, Court of Appeals of Louisiana, March 8, 1954.

Work must not be delayed

A provision in a subcontract giving the general contractor the right to direct the progress and sequence of the work does not release him from his liability for damages caused by delays. "It implies an obligation on the part of the general contractor to keep the work in such a state of forwardness as to enable the subcontractor to perform within a limited time. Nelson v. Pickwick Associated Co., 30 Ill. App. 333, 336; Michigan Ave. M.E. Church v. Hearson, 41 Ill. App. 89, 92; and authorities there cited."[1]

(1) J. J. Brown Co., Inc. v. J. L. Simmons Co., Inc., 118 N.E. 2d 781, Appellate Court of Illinois, April 8, 1954.

Recovery right not lost by acceptance of work

A written contract was entered into between the owner of a parcel of land and a contractor whereby the latter agreed to erect and finish a building "in a perfect workmanlike manner" and in accordance with the plans and specifications.

Upon completion of the building, the owner accepted the same and paid the contractor the full contract price in reliance on the contractor's assurance that the house had been built in accordance with the plans and specifications.

Within nine days after the building was accepted, certain defects developed therein and upon the contractor's refusal to remedy the same, the owner brought an action to recover for the cost of remedying the defects and also for the attorney's fee. The owner obtained a judgment which was later affirmed on appeal.[1]

The contractor interposed the defense that at the time the owner accepted the building, he knew, or should have known of the defects in question and that this constituted a waiver of such defects. The court found as a fact that the evidence did not warrant the conclusion that the owner could be charged with knowledge of the defects when he accepted the building.

The court, in its opinion, quoting from another case,[2] stated: "The courts of this state have held that an owner is not estopped from claiming damages for the breach of a building contract by taking possession and moving into the building. The failure of the contractor to construct the building in accordance with the plans and specifications was a violation of the contract and the taking of possession of the premises by the plaintiff [owner] can not be considered as a discharge of the defendant's [contractor's] liability."

The court in its opinion, further stated: "Waiver involves both knowledge and intention and it follows that ignorance of a material fact negatives waiver. Waiver can result only from the intentional relinquishment of a known right."

(1) Kozowski v. Fowler et al., 71 So. 2d 246, Court of Appeal of Louisiana, March 29, 1954.
(2) Michel v. Efferson, 223 La. 136, 65 So. 2d 115.

Contractor not responsible for defects in plans

"The general rule is that a construction contractor who has followed plans and specifications furnished by the owner, architect or engineer, and which have proved to be defective or insufficient, will not be responsible to the owner for loss or damage which result after the work has been completed, solely from the defective plans and specifications, in the absence of any negligence on the part of the contractor or any express warranty by him as to the plans and specifications being free from defects. 9 American Jurisprudence, p. 20."[1]

In the above case, the action was brought to recover the cost of remedying defects in the work. There was a guarantee against defects for a period of one year after the acceptance of the work. The owner was granted a judgment by the trial court but the same was reversed on appeal and a new trial ordered, the appellate court holding that the contractor was not liable for defects resulting from faulty plans and specifications and the evidence was insufficient to show that the defects in question resulted from any fault on the part of the contractor.

(1) Havard v. Board of Supervisors of Humphreys County et al., 70 So. 2d 875, Supreme Court of Mississippi, March 15, 1954.

(These summaries of court decisions are prepared by J. Vernon Werbin, New York attorney and civil engineer.)

OBITUARIES

John H. Sellen, Sr., associated with the John H. Sellen Construction Co., Seattle, died August 19. Early in his engineering career he worked for Kennecott Copper Corp. in Alaska, later was in charge of construction for Tidewater Associated Oil Co., in Seattle.

Albin Larson, 71, 35 years general superintendent for Gilpin Construction Co. and General Construction Co., Portland, Ore., died August 24. He was employed by the Portland Bridge & Building Co. before joining the affiliated construction firms.

Roderick B. Young, one of Canada's leading concrete experts, died August 24 in Toronto. For 41 years an employee of Ontario's Hydro-Electric Power Commission, he had served until recently as associate director of research. He received many awards for contributions to concrete technology, including the Thomas Fitch Rowland prize from ASCE, the Wason Medal from the American Concrete Institute, and the Award of Merit from American Society for Testing Materials.

John Donnelly, 90, a Cleveland contractor for more than 40 years, died August 25. A director of the Cleveland Builders' Exchange, he had retired from active business participation in 1940 but still operated a sand and gravel pit firm at the time of his death.

Adam G. Lantz, 60, Croydon, Pa., engineer, died August 31. He was associated with Baker House Corp. of Cornwells, Pa.

Davenport Broomfield, 93, a pioneer civil engineer of the San Francisco Peninsula and for many years city engineer of San Meteo, Calif., died August 23. He started his career in 1882 as assistant to the city engineer of San Francisco, then served as assistant to the chief engineer of Southern Pacific Co.

John A. Ireland, 99, retired building contractor of Atlantic City, N. J., died August 30. He built many of the resort's early hotels.

Cecil H. Nelson, 65, former chief engineer of the Ontario Department of Highways, died in Toronto, September 5. He joined the department in 1919, became resident engineer at Ottawa in 1923, assistant chief engineer at Toronto in 1937 and chief engineer in 1951.

STONE R.R. VIADUCT REPAIRED WITH "GUNITE"

The above photographs show a large stone viaduct belonging to an eastern Railroad. This structure built in 1888, was originally designed for a single track, but was later changed to accommodate double tracks. Increased locomotive weights and power caused the mortar in the joints to chink out due to vibration. Cement Gun crews made the viaduct "as good as new" by repointing the joints, and grouting one of the arches over the Highway.

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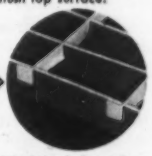

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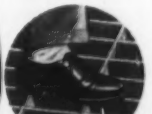

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STATE SANITARY ENGINEER DAVE LEE—His problems range in scale from the septic tank to Miami's big treatment works now abuilding.

Lee to head sewage works federation

The Federation of Sewage & Industrial Wastes Associations, in Cincinnati Oct. 11-14 for its 27th annual meeting, will name as its 15th president David B. Lee, a man with a mission.

As director of the Bureau of Sanitary Engineering, Florida State Board of Health, 47-year-old Dave Lee is convinced that into his hands has been entrusted the safekeeping of Florida's greatest natural resource—the waters within and around the peninsula state.

He's not quite sure whether this responsibility has been delegated to him by the governor, the State Board of Health, the people of Florida, or the Almighty. Deeply religious, he is inclined to believe the last is the case.

• **Realistic approach**—However, Lee is a realist. He realizes that modern civilization must not only preserve the waters of the earth; it must also use them. This use entails some degree of pollution, and only vigilance and determination can control that pollution.

Dave Lee doesn't waste much energy tilting at old, established practices that cause pollution. Instead, he has set his sights on preventing, as much as possible, new pollution.

He acknowledges that temporary or improvised measures of somewhat less than ideal scope are sometimes successful. But he also knows that temporary can last an awfully long time, and frequently, the exceptions of today are the standards of tomorrow.

• **No compromises**—It is his vigilance and determination never to retreat that have won for Dave Lee the admiration of many and the hatred of others. Most will admit he is a reasonable man—no treatment for treatment's sake—a good organizer and administrator, and a good personality for the Florida situation.

Florida has gained the unwanted title of "septic tank state." Holding that this horse-and-buggy type of sanitation is unreliable at best in a state with such a high groundwater table, Dave Lee has pursued its elimination from the urban development field with unrelenting vigor.

• **Results**—Housing developers in Florida have seldom been faced with such incorruptible determination. The result is that Florida today is outstanding in its development of privately owned and operated subdivision systems, and organized municipalities are constructing larger public sewerage systems at a gratifying rate.

Dave Lee began cracking down when postwar appraisers indicated that Florida was destined for a tremendous population growth. In the postwar years, the total number of sewage treatment plants in Florida has soared from 29 (exclusive of simple septic tanks) to more than 170. Of these, 68 are large subdivision sewerage systems under private ownership.

Lee's unheralded "sudden death" rule on septic tanks issued in February, 1953, at the peak of home building, really set Florida homebuilders back on their heels. Under this rule, the Bureau of Sanitary Engineering and local health units affiliated with the State Board of Health were directed not to sign the forms on sanitation and water supply required by the Federal Housing Administration. Without these FHA forms, home builders relying on FHA-insured mortgage financing were stymied. The rule stirred up a statewide storm of protest among home builders and county and municipal officials. Dave Lee took off on a business trip outside the state and let the storm roar.

By the time he got back, builders and local officials were in the mood to compromise. And they did. In Dade County, the state's biggest and fastest growing area, home builders and county officials appointed a joint committee to study the overall problem of sanitation and water supply. The result was a county ordinance and map establishing minimum elevation criteria for home building and a set of standards for determining where septic tanks will be permitted and where sewerage systems will be required. Since then nearly a dozen sanitary sewerage systems to serve housing developments have been put under construction and almost as many water treatment plants and distribution systems have been built.

Observers noted that in none of the bitter denunciation voiced against Dave Lee during this controversy were his motives questioned. Even his most violent critics agreed that in principle he was right. They quarreled exclusively with his timing and the financial strain it threw on their plans.

• **Background**—Born in Georgia and graduated from the University of Florida in 1932, Lee went right to work for the Florida State Board of Health. He took time to get a master's degree from Harvard in 1937 and was promoted to his present position in 1941. In World War II with the U. S. Army in New Guinea his job was malaria control. He was later loaned to the Institute of Inter-American Affairs for work in the same field.

He was the only sanitary engineer member of the U. S. delegation to the Second World Health Organization Assembly in Rome in 1949. He has been a member since 1952 of the National Research Council's Committee on Sanitary Engineering and Environment, the only member not on a university faculty.

Bids Asked—Low Bidders—Contracts Awarded—First Section—

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NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION

Mass., West Springfield—BA 10/4—Town, Bd. Water Comrs., 126 Park St., water main constr. Pease Ave.; low service sys. $100,000. Tighe & Bond, 189 High St., Holyoke, engrs. Bids 9/27 and 9/13 cancelled. CD 9/14 and 9/3.

BIDS ASKED—BUILDINGS

▲ **R. I., Newport**—HIGH SCHOOL—BA 10/6—City, High School Comm., Office Supt. Schools, City Hall, Rogers High School, off Ruggles Ave. $2,200,000. Plans deposit $100. Extended date. Kelly & Gruzen, 73 Tremont St., Boston, Mass., archts. CD 8/16.

Mass., Concord—SCHOOLS—BA 10/28—Town, Stow St., Alcott Elementary School addn., $520,000; Thoreau Elementary School, $427,000. S. W. Haynes & Assoc., 336 Main St., Fitchburg, archts. CD 9/16/53.

▲ **Mass., Natick**—FERMENTATION, etc.—BA 10/15—Carling's Brewery, O. I. Powers, owner's agt., 9400 Quincy Ave., Cleveland, O., and Canadian Breweries Ltd., 285 Victoria St., Toronto, Ont., 5 story fermentation bldg., 4 story, 50x250 ft. brewhouse, power plant. $15,000,000. CD 5/25.

▲† **Mass., Ayer**—BARRACKS—BA 10/22—U. S. Eng., 857 Commonwealth Ave., Boston, 2 barracks, Fort Devens, ENG-19-016-55-21, $1,000,000. Plans deposit $25. Samuel Glaser, 105 Newbury St., Boston, engr.-archt. CD 8/30.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **MASSACHUSETTS**—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,
Kelleher Corp., Turners Falls, Mass. LB **$595,283**, est. $570,000. hy. constr. Rte. 2, F 185 (4), Buckland-Shelburne;
Campanella & Cardi Constr. Co., 780 Jefferson Blvd., Warwick, R. I. LB **$598,596**, est. $540,000. hy. and bridge constr. Mattapoisett Rd. Mill St. and Wareham Rd. Rte. 6, Marion;
Ernst Constr. Corp., 75 Lathrop St., Buffalo, N. Y. LB **$434,985**, est. $540,000. steel superstructure John F. Fitzgerald Expressway between High and Congress Sts., Contr. 1, Boston;
Baker & Co., Inc., 3475 Washington St., Jamaica Plain, Mass. LB **$112,450**, est. $117,000. hy. work Hyde Park Ave., Boston. Bids Sept. 14. CD 9/2 and 8/18.

† **A. Cefalo & Sons, Inc.**, 42 Bennett St., Lynn, Mass. LB, **$521,000**, est. $400,000-$600,000. relocation, constr. addns. to alert hangar, Westover Air Force Base, ENG-19-016-55-14, CHICOPEE FALLS, MASS. U. S. Eng., 857 Commonwealth Ave., Boston 15, Mass. Bids Sept. 17. CD 9/2.

R. H. White Constr. Co., 41 Central St., Auburn, Mass. LB **$266,207**, est. $300,000. Contr. 6 high service imprvs. Holden Reservoir Pump Station, WORCESTER, MASS. City, City Hall, Worcester, Mass. Bids Sept. 15. CD 8/12.

Lind McLeod, Inc., 1780 Stratford Ave., Stratford, Conn., CA, **$78,823**, est. $80,000, Contract 28, storm water system, STRATFORD, CONN. Town, Town Hall, Stratford, Conn. CD 10/4/51.

BUILDINGS

LOW BIDS AND CONTRACTS

Granger Constr. Co., Inc., 306 Main St., Worcester, Mass. CA, **$844,616**, est. $744,000. Junior Senior High SCHOOL, Concord St., ASHLAND, MASS. Town, Concord St., Ashland, Mass. CD 9/14, under LB.

▲ **Park Constr. Co., Inc.**, 40 Court St., Boston, Mass. CA, **$1,267,000**, est. $1,200,000. Junior Senior High SCHOOL, off South Franklin St., HOLBROOK, MASS. Town, R. N. Chapman, chn. Bldg. Comn., Holbrook, Mass. CD 7/20, under LB.

Concrete Constr. Co., 165 Chelsea St., Everett, Mass. CA; **$802,000**, est. $800,000. Elementary SCHOOL, Meacham St., SOMERVILLE, MASS. City, City Hall, Somerville, Mass. CD 8/31, under LB.

▲ **Tornabene Bros. Co.**, 170 Needham St., Newton Upper Falls, Mass. LB, **$2,125,000**. HIGH SCHOOL, Piper Rd., WEST SPRINGFIELD, MASS. Town, High School Bldg. Comn., Town Hall, West Springfield, Mass. Bids Sept. 16. CD 8/24.

Leonard Rugo, Inc., 30 Huntington Ave., Boston, Mass. LB, **$567,900**, est. $450,000. Elementary SCHOOL, Ralph Talbot St., South Weymouth, WEYMOUTH, MASS. Town, Bldg. Comn., 89 Middle St., East Weymouth, Mass. Bids Sept. 15. CD 9/1.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION

N. Y., Idlewild—SURCHARGE FILL—BA 10/5—At office of Chief Engineer of The Port of New York Auth., 111 8th Ave., New York, Zone 11, installation of surcharge fill for Hangar No. 9, New York International Airport, Contr. NYA-430.001. Plans deposit $30. CD 1/18.

N. Y., Astoria—BA 10/13—Dpt. P. Wks., Municipal Bldg., New York Zone 7, Contr. 4, structures and equip.; Contr. 5, electrical; Contr. 6, plumbing; Contr. 7, heating and ventilating for constr. Bowery Bay Sewage Treatment Works Exten., Berrian Blvd. and 43 St., Queens Boro. Plans deposit $100. Extended date. CD 8/30.

NEW JERSEY—BA 10 /14—New Jersey Turnpike Auth., Administration Bldg., New Brunswick,
Hudson Co.—Contract N-12, constr. bridge crossings over Hudson Boulevard in Bayonne, ramp and bridge crossing over Garfield Ave. in Jersey City and a bridge over Avenue "C" and retaining wall, etc. in Bayonne and Jersey City. CD 8/20/53, under Streets and Roads.

† **N. Y., Westhampton**—FACILITIES—BA 10/19—U. S. Eng., 80 Lafayette St., New York, Zone 13, misc. facilities (FY 1955), Suffolk County Air Force Base, Serial No. ENG-30-075-55-41. $500,000-$1,000,000. Plans deposit $25. CD 10/15/52.

† **N. Y., Newburgh**—BRIDGING—BA 10/21—U. S. Eng., 80 Lafayette St., New York, Zone 13, Catskill Aqueduct Bridging, clear and approach zone, Stewart Air Force Base, Serial No. ENG-30-075-55-83. $500,000-$1,000,000. Plans deposit $10. CD 2/26.

BIDS ASKED—BUILDINGS

N. Y., Syracuse—LABORATORY—BA 10/14—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany, woods products laboratory, New York State College of Forestry, Syracuse University. Plans deposit $50. CD 7/9/53.

SOON LETS CONTRACT—BUILDINGS

▲ **Pa., Franklin**—WAREHOUSE, etc.—Joy Mfg. Co., Franklin, soon lets contract 1 story, 250x360 ft., 220x560 ft. brick, block, steel, warehouse addn. and machine shop. $2,000,000. H. T. Osborn & Co., 12th St., archts.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **PENNSYLVANIA**—Pennsylvania Turnpike Comn., 11 N. Fourth St., arrisburg,
C. J. Langenfelder & Son, Inc., 8427 Pulaski Hy., Baltimore, Md., CA **$3,817,400**. constr. 5.33 mi. Northeastern Exten., Sec. 35-G, in Milford Twp., Bucks Co. and Lower Milford Twp., Lehigh Co. Bids Aug. 31. CD 9/2, under LB.

▲ **PENNSYLVANIA**—Pennsylvania Turnpike Comn., 11 N. Fourth St., Harrisburg,
James D. Morrissey, Inc., 9119 Frankford Ave., Phila., Pa., CA **$3,473,751**, constr. 4.34 mi. sect. of Northeastern Exten., Sect. 35-D in Towamancin, Lower Salford and Franconia Twps., Montgomery Co. Bids Sept. 7. CD 9/9, under LB.

▲ **MARYLAND**—State Rds. Comn., 108 E. Lexington St., Baltimore, Zone 2.
Burkholder & Burkholder, Box 1240, Lynchburg, Va. CA **$1,288,698**. surf. 2.85 mi. relocated U.S. Rte. 240, near Rockville, Contr. M 485-9-320, Montgomery Co. CD 8/10, under LB.

MARYLAND—State Rds. Comn., 108 E. Lexington St., Baltimore, Zone 2,
Patapsco Eng. Co., 10 E. Cromwell St., Baltimore, Md. LB **$130,789**. resurf. 4.59 mi. State Rte 33, Easton toward Kirkham, Contr. T 157-5-220, Talbot Co.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **H. R. H. Constr. Corp.**, 16 W. 46 St., New York 19, N. Y., LB **$3,942,000**, general constr. and foundation;
H. Sand & Co., Inc., 11 Park Pl., New York 7, N. Y., LB **$554,300**, heating for constr. Sumner HOUSES, Proj. No. NYS-58-4, Sect. 1, incl. Bldgs. 1 to 7 in area bounded generally by Park, Lewis, Myrtle, Sumner Aves., and Broadway, BROOKLYN, N. Y. New York City Housing Auth., 299 Broadway, New York 7, N. Y. Bids Sept. 14. CD 8/19.
Mancusso Bros., Inc., 1160 McQuade Ave., Utica, N. Y. CA **$988,475**, Hamilton Homes HOUSING, Proj. NYS-68, bounded by Hamilton, Walnut, Bunner and Duer Sts., OSWEGO, N. Y. Oswego Housing Auth., City Hall, Oswego, N. Y. Bids Aug. 19, awarded Sept. 17. CD 7/7.

▲ **Salamanca Housing Auth.**, Stanley E. Bishop, secy., City Hall, Salamanca, N. Y., rejected bids Aug. 17, HOUSING Proj. No. NYS 69, Front Ave., between Memorial Park and Fern Ave., SALAMANCA, N. Y. LB **$1,064,000**. est. $1,000,000. Will re-advertise. CD 8/25, under LB.

† **Piracci Constr. Co., Inc.**, 2552 Woodbrook Ave., Baltimore 17, Md., LB **$875,870**. addnl. BUILDINGS and utilities, Veterans Admin. Hospital, LEBANON, PA. Veterans Admin., Munitions Bldg., Wash., D. C. Bids Sept. 14. CD 7/22.
Rupert Constr. Co., 3400 Lancaster Ave., Wilmington, Del., CA, **$812,272**, Carrcroft Elementary SCHOOL, WILMINGTON, DEL. Mount Pleasant School Dist., Duncan Rd., Wilmington, Del. CD 11/30.

PROJECTS COVERED

By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $34,000; other public works $60,000; industrial buildings $82,000; other buildings $300,000. Also Foreign projects of $100,000 and more in size of interest to American contractors.

By Regions & Classes of Construction

(In order of Listing)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED

New England
Middle Atlantic
South
Middle West
West of Mississippi
Far West

PROPOSED WORK

Water Supply
Sewers, Waste Disposal
Bridges
Streets & Roads
Earthwork, Waterways
Public Buildings
Mass Housing
Commercial Buildings
Industrial Buildings
Unclassified

In These Stages

PROPOSED WORK: Before and including appointment of engineers or architects.
BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.
LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a suuplementary contract award report will be published.
CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.
CD dates shown are of Construction Daily issue in which last previous report was published.

Symbols and Abbreviations Include:

† Federal Government
▲ Project of $1,000,000 or over.
ENR Engineering News-Record
CD Construction Daily

For additional reports see Construction Daily.

SOUTH

BIDS ASKED—HEAVY CONSTRUCTION

† **N. C., Fort Bragg**—AIRPORT IMPRVS.—BA About 10/27—U. S. Eng., 308 Customhouse, Wilmington, relocating Tank Creek; relocating Reilly St., Pope Air Force Base, Inv. No. ENG-31-075-55-18. Plans deposit $3.60. CD 12/26/51, under Public Buildings.

BIDS ASKED—BUILDINGS

Ala., Florence—SCHOOLS—BA 10/7—City Bd. Educ., Florence Norwood Elementary School and Weeden Heights Elementary-Junior-High School. Plans deposit $30 each. Extended date. Turner & Northington, 317 Medical Arts Bldg., archts. CD 9/16.

La., Angola — WAREHOUSE — BA 10/7 — State Bldg. Auth., State Capitol, Baton Rouge, constr. inside block cell and refrigeration warehouse for Louisiana State Penitentiary. $495,000. Plans deposit $50 each, Curtis & Davis, 338 Baronne St., New Orleans, archts. CD 8/6.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **NORTH CAROLINA-VIRGINIA**—Carolina-Virginia Turnpike Auth. and Virginia Coastal Turnpike Auth., Virginia Beach, Va.
Ballenger Paving Co., Paris, Greenville, S. C., LB **$522,062**, Proj. No. 1, Virginia Beach-Nags Head Rd. on the Carolina end;
Hertford Constr. Co., Hertford, N. C., LB **$525,651**, Proj. No. 2, Virginia portion of Hy.;
J. R. Houska, Waco St. and Virginian R.R., Norfolk, Va. LB **$71,025**, Proj. No. 3, culverts and bridges, foregoing for 53 mi. coastal toll road between Naggs Head, N. C., and Virginia Beach, Va. Bids Sept. 15. CD 8/30.

† **Gilson Constr. Co.**, 757 E. 3 St., Lexington, Ky. LB **$351,158**, est. $400,000. bomb and shell reconditioning facility, Blue Grass Ordnance Depot, LEXINGTON, KY. U. S. Eng., P. O. Box 59, Louisville, Ky. Bids Sept. 16. CD 8/19.

▲ **Virginia Engineering Co., Inc.**, 80 29 St., Newport News, Va. LB **$4,943,000**. general contract and constr. 7 bldgs.;

Robert E. Barry Electric Co., 1508 Melwood St., Louisville, Ky. LB $1,109,450. electrical work on 10 bldgs.;

Libert Engineering & Mfg. Co., 1450 S. 15 St., Louisville, Ky. LB $1,014,000. heating, ventilating 7 bldgs. and air-conditioning of admin. bldg., restaurant and kitchen;

Bert J. Waltrip, 2501 W. Main St., Louisville, Ky. LB $379,700. plumbing on 7 bldgs.;

James E. Smith & Sons, 2830 Crittenden Dr., Louisville, Ky. LB $1,447,806. combination heating, ventilating, air-conditioning and plumbing;

Ward Refrigerating & Eng. Co., Inc., 7 and Kentucky Sts., Louisville, Ky. LB $157,250. refrigeration for ice rink in coliseum, above contracts for coliseum, admin. bldg., restaurant, kitchen, warmup ring, exposition bldg., sheep and swine pavilion, livestock pavilion and ice rink in coliseum for new State Fair Grounds, LOUISVILLE, KY. State Div. Purchases, Frankfort, Ky. Bids Sept. 16. CD 8/9.

BUILDINGS

LOW BIDS AND CONTRACTS

Allen C. Minnix & Sons, 216 C St. N. W., Wash., D. C. CA $660,682. constr. Patrick Henry-Thomas Jefferson SCHOOL addn., ARLINGTON, VA. Arlington Co. School Bd., 1426 Quincey St., Arlington, Va. J. Gibson Wilson, 1019 15th St. N. W., Wash., D. C., structural engr. Bids Sept. 15. CD 9/2.

▲ **Eugene Simpson & Brother**, 300 Montgomery St., Alexandria, Va., LB $1,646,747, constr. Groveton HIGH SCHOOL, FAIRFAX, VA. Fairfax Bd. Educ., Falls Church, Va. Bids Sept. 16. CD 8/23.

Pauburne, Inc., c/o Paul Gordon, Box 89-A, Richmond, Va. Separate Contracts, $436,000, thirty-seven 1 and 1½ story, no bsmnt. RESIDENCES, Williamsburg Rd. (Sanburne Subdivision), RICHMOND, VA.

J. M. Wilkinson, 1600 Westover Hills Blvd., Richmond, Va. Separate Contracts. $573,000. 57 brick, frame RESIDENCES, street grading, near RICHMOND, VA.

▲ **Virginia Eng. Co.**, Newport News, Va., CA $7,804,000. first stage of BASIC SCIENCE BLDG., MORGANTOWN, W. VA. West Virginia University, Morgantown, W. Va. Bids Aug. 31. CD 9/2, under LB.

Clark-Wincey Co., 1349 Macon Ave., Macon, Ga., CA, $321,823, Negro Elementary SCHOOL, MACON, GA. Bibb Co. Bd. Educ., Macon, Ga. Bids Sept. 8. CD 1/22/48.

Sullivan & Cozzart, 822 W. Kentucky St., Louisville, Ky. LB $363,000. WAREHOUSE, LOUISVILLE, KY. American Radiator & Standard Sanitary Mfg. Co., 1601 S. Brook St., Louisville, Ky. Bids Sept. 14. CD 9/7.

▲ **Jones-Hettelsatter Co.**, 1911 Baltimore St., Kansas City, Mo. CA Est. $1,000,000. FEED MILL, LOUISVILLE, KY. Aubrey Feed Co., 932 E. Chestnut St., Louisville, Ky. Awarded Sept. 15. CD 8/20.

Rostetter Constr. Co., Lexington Rd., Louisville, Ky. LB $306,761. general and electrical contracts RECEPTION CENTER for Kentucky Youth Auth., LYNDON, KY. State, Div. Purchases, Frankfort, Ky. Bids Sept. 14. CD 8/11.

MIDDLE WEST

BIDS ASKED—HEAVY CONSTRUCTION

O., Dayton—BA 10/14—Dpt. Service & Bldgs., Municipal Bldg., sanitary interceptor sewer, Stage 1, Broadway St. from Melba St. to Steiner Ave. $201,000. CD 6/30.

BIDS ASKED—BUILDINGS

Mich., Big Rapids—SCHOOLS—BA 10/12—Bd. Educ., Clayton E. Pierce, treas., 4 elementary schools, First, Third, Fourth and Fifth Wards. $600,000. Louis C. Kingscott & Assoc., 511 Monroe St., Kalamazoo, archts. CD 6/3.

▲ **Wis., Milwaukee**—HOSPITAL—BA About 10/20—Franciscan Sisters, 1845 N. 4 St., Milwaukee, Wis., 6 story, ground floor, bsmnt., rein.-con., brick, steel, St. Michael's Hospital. $6,000,000. Plans deposit $100. Ralph P. Ranft, 3606 Gravois Ave., St. Louis 16, Mo., archt. CD 2/19/52.

▲ **O., Columbus**—AUDITORIUM—BA 12/2—State Dpt. P. Wks., State Dpts. Bldg., Mershon Auditorium to seat 3,200 persons, 42x100 ft. stage, at Ohio State University. $2,500,000. Bellman, Gillett & Richards, 518 Jefferson St., Toledo, archts. CD 9/15.

SOON LETS CONTRACT—BUILDINGS

Mich., Harper Woods—CONVENT—Giffels & Vallet, Inc., archt., 1900 Marquette Bldg., Detroit, soon lets contract convent, for Our Lady Queen of Pead, 21101 Bournemuth St., Detroit, Mich. $300,000.

Mich., Redford—PLANT—Ford Motor Co., 3000 Schaefer St., Dearborn, soon lets contract mfg. development plant, Albert Kahn Associated Architects & Engineers, Inc., 345 New Center Bldg., Detroit, archt.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Arthur S. Langenderfer, Inc., 4690 W. Bancroft St., Toledo, O., CA, $209,858, est. $213,403, pave and widen sects. Bowen Rd. and 11 other Sts. in Washington Twp. and City of Toledo, TOLEDO, O. Comrs. Lucas Co., Court House, Toledo, O. Bids Sept. 16, awarded Sept. 16. CD 9/8, under LB.

A. Bentley & Sons Co., 201 Belmont Ave., Toledo, O. CA Approx. $115,000, animal dens for Kodiak and Polar bears at Walbridge Park Zoo, TOLEDO, O., Toledo Zoological Society, 2700 Broadway, Toledo, O. CD 3/29.

▲ **INDIANA**—Indiana Toll Road Comn., 309 W. Washington St., Indianapolis,

Suber & Co. Inc., P.O. Box 338, Whitmire, S. C., CA, $6,898,586, Contracts 51, 52 and 53, 12 4/10 mi. paving Indiana East-West Toll Road, Steuben Co. Bids Sept. 8. CD 9/13, under LB.

▲ **INDIANA**—State Hy. Comn., Indianapolis,

Rock Road Constr. Co., Rogers Ave., Chicago, Ill., CA, $1,321,743, est. $1,654,754, 0.999 mi. c.conc. State Road, 420, Hammond, Lake Co.; CA, $1,590,770, est. $1,765,948, 5.254 mi. c.conc. State Road 41, Rural District, LaPorte Co.;

Gast Constr. Co., Warsaw, Ind., CA, $585,667, est. $641,625, c.conc. 0.29 mi. East of Indianapolis, Marion Co. Grand total $3,498,180. Bids Sept. 2, awarded Sept. 16.

† **Luhr Bros.**, Columbia, Ill., LB, $66,074, est. $59,730 on Part 1 and $112,743, est. $98,987 on Part 2, 72 pressure relief wells, collector sys., etc. in East St. Louis and vicinity, East Side Levee and Sanitary Dist., Proj. Item V-A (2) Parts 1 and 2, CIVENG-23-065-54-127, ILLINOIS. U. S. Eng., 420 Locust St., St. Louis 2, Mo. Bids Sept. 15. CD 8/23.

Engineering Constr. Co., 1 National Bldg., Tulsa, Okla., LB, $440,209, using steel pipe;

Modern Welding Co., Owensboro, Ky., LB, $465,308 using c.i. pipe, natural gas distr. sys., FLORA, ILL. City, R. D. Lewis, city clk., Flora, Ill. Bids Sept. 7. CD 8/27.

† **Midwest Dredging Co.**, 530 Midland Bank Bldg., Minneapolis, Minn. and **Kertzman Dredging Co.**, La Moille, Minn., CA, $407,000, dredging Superior Front Channel, Superior, Wis. and Duluth, Minn., CIVENG-47-013-55-3, WISCONSIN and MINNESOTA, U. S. Eng., 428 Federal Bldg., Milwaukee, Wis. Bids Aug. 26. CD 8/4.

MICHIGAN—State Hy. Dpt., Stevens T. Mason Bldg., Lansing,

Northern Builders, Traverse City, Mich. LB, $159,590. est. $170,000. rein.-con. continuous T-beam bridge, Lakewood Rd. over Detroit-Toledo Expressway, Bm B1 of 58-5-26 C1-R, Monroe Co. Bids Sept. 8. CD 9/2.

MICHIGAN—State Hy. Dpt., Stevens T. Mason Bldg., Lansing,

Hertel-Deyo Co., 5205 Division S. St., Grand Rapids, Mich. LB, $170,045, est. $180,000. 0.822 mi. c. conc., curb and gutter M-142, 0.039 mi. of wid'n., SS 32-20 C3-U, SS 32-20 C4-R (S 197 3), Huron Co. Bids Sept. 8. CD 8/26.

▲ **MICHIGAN**—State Hy. Dpt., Stevens T. Mason Bldg., Pine and Michigan Ave., Lansing,

Louis Garavaglia, 24240 Mound Rd., Center Line, and

Denton Constr. Co., 7-170 General Motors Bldg., Detroit, Mich. CA, $1,553,090, est. $1,750,000. 36 ft. dual c.conc. 1.346 mi. UI 82-66 C12 (UI 391 75), Wayne Co. CD 9/2.

Sugden & Sivier, Inc., 13100 Cloverdale St., Oak Park, Mich. LB, $243,491, est. $230,000. Murray Drain Ten Mile Rd. Coolidge to Southfield Rd., Oak Park, PONTIAC, MICH. Oakland Co., Ralph A. Main, drain comr., 1 Lafayette St., Pontiac, Mich. Bids Sept. 15. CD 9/1.

J. A. Fredman, Inc., Pontiac, Mich. CA Est. $125,000. brick beach house, Maple Beach Kensington Metropolitan Park, HCAA 504-54D Job 54-3, MILFORD, MICH. Huron-Clinton Metropolitan Auth., 1750 Guardian Bldg., Detroit, Mich. Bids Aug. 6. CD 7/16.

Sargent Constr. Co., 2840 Bay Rd., Saginaw, Mich. CA, $962,532, est. $1,040,000. dual 24 ft. c.-conc., b. conc. ramps, Burl Rd. to Wayne Co. Line and Wayne Co. line to North Huron River Dr., FM 58-22 C9-R, F 58-22 C10-R (FI 82-191 C2-U) (F8 424 8), Monroe and Wayne Counties, CD 8/15, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

Frank Messer & Sons, Inc., 4612 Paddock St., Cincinnati, O., CA $337,980. CHEMICAL ABSTRACTS BLDG., COLUMBUS, O. Ohio State University, N. High St., Columbus, and American Chemical Society, 1155 16th St. N.W., Wash., D. C. CD 7/19.

▲ **H. C. Huber Constr. Co.**, 631 E. Stroop Rd., Dayton, O. Owner Builds. Approx. $2,000,000. 2,200 HOMES, 366-acre tract at and near South Dayton Airport, DAYTON, O.

▲ **M. W. Kellogg Co.**, Hippodrome Bldg. Annex, Cleveland, O., CA anhydrous ammonia plant, nitric acid plant and solution plant;

Arthur G. McKee & Co., 2300 Chester St., Cleveland, O. CA, urea plant, office bldg., laboratory, warehouse, shop, boiler house and locker room for PETROCHEMICALS PLANT, LIMA, O. Total est. $17,000,000. Standard Oil Co. of Ohio, 3083 Broadway, Cleveland, O.

▲ **Koppers Co., Inc.**, Koppers Bldg., Pittsburgh 19, Pa. CA. install 59 Kopper-Becker Gun flue type COKE OVENS, LORAIN, O. National Tube Div. (U. S. Steel Co.), E. Mason St. and Nickel Rd., Gary, Ind.

J. E. Murphy Co., 4605 Evanston Ave., Indianapolis, Ind. Owner Builds. $300,000 or more, HOMES, 95 St., INDIANAPOLIS, IND.

Woodlawn Homes, Inc., 217 W. Main St., Muncie, Ind., Owner Builds. $300,000, HOMES in Woodlawn Addn., MUNCIE, IND.

Bondgard Constr. Co., 1424 9 St., Racine, Wis., LB, $381,714, general contract 1 story Parochial SCHOOL, RACINE, WIS. Holy Name Catholic Congregation, 1503 Grand Ave., Racine, Wis. A. J. Seitz, 216 5 St., Racine, Wis., archt.

Precour Constr. Co., 1117 Bowen St., Oshkosh, Wis., CA, $549,925, general contract COLLEGE, WATERTOWN, WIS. Northwestern College, 525 College Ave., Watertown, Wis. Bids Sept. 10, awarded Sept. 15. CD 8/17.

▲ **Miller-Davis Co.**, 1029 Portage St., Kalamazoo, Mich. CA $1,340,000. self liquidating DORMITORY and Food Commons facilities, Ferris Institute, BIG RAPIDS, MICH. State, A. N. Langius, dir. State Bldg. Dpt., Lewis Cass Bldg., Lansing, Mich. CD 7/20.

Fairfax Homes, Inc., 15651 W. McNichols St., Detroit 35, Mich. Owner Builds. $500,000. 30 HOMES on 1 acre sites, Braes of Bloomfield, Walnut Lake Rd. and Kenmorp Rd., BLOOMFIELD, MICH.

▲ **Alfred A. Smith**, 721 E. Saratoga St., Ferndale, Mich. CA Est. $1,000,000. alterations, top addn. WAREHOUSE, Beacon and Brush St., DETROIT, MICH. J. L. Hudson Co., 1206 Woodward St., Detroit, Mich. Smith-Hinchman & Grylls, Inc., 800 Marquette St., Detroit, Mich., archt. CD 12/3.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION

▲ **Oklahoma**—LODGE and CABINS—BA 10/20—State Planning & Resources Bd., State Capitol, Oklahoma City, lodge and cabins, appurtenances at Lake Texhoma, Bryan Co. $2,029,000. Plans deposit $100. Dow Gummerson, Bass Bldg., Enid, archt. CD 5/27.

† **North Dakota**—BA 11/2—U. S. Eng., Riverdale, spillway stilling basin, Garrison Dam and Reservoir Proj., Riverdale, Inv. No. CIVENG-32-015-55-19. CD 9/15.

BIDS ASKED—BUILDINGS

▲ **Kan., Wichita**—FIELD HOUSE—BA 10/7—University of Wichita, 1845 Fairmount St., field house. $1,500,000. CD 3/9, under LB.

† **Mo., Fort Leonard Wood**—SERVICE CLUB—BA On Or About 10/19—U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo., 1 story, 63x252 ft., wood frame Service club, concrete slab fdn., etc. ENG-23-028-55-11. CD 7/6, under LB.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Lenci, Lenci & Englund, Virginia, Minn. CA $160,000. sanitary sewers, mains, lift stations, VIRGINIA, MINN. City, J. G. Milroy Jr., clk., Virginia, Minn. Bids Aug. 24.

OKLAHOMA—State Hy. Comn., Capitol Office Bldg., Oklahoma City,

Henryetta Constr. Co., Henryetta, Okla., CA $280,055, est. $355,446, three concrete, steel bridges over the Verdigris River on U.S. 66, Catoosa, Rogers Co. Bids Sept. 14, awarded Sept. 15. CD 9/2.

▲ **OKLAHOMA**—State Hy. Dpt., Capitol Office Bldg., Oklahoma City,

Anderson Constr. Co., McAlester, Okla., CA $148,295, est. $163,430, stabil. aggregate base and double bit. surf. 6.67 mi. S.H. 31 at Lequire, Haskell Co.;

Clark Constr. Co., Woodward, Okla., CA $90,422, est. $115,860, grade, drainage 7.159 mi. S.H. 50 east of Mooreland, Woodward Co.;

Frix & Foster, Barnes Bldg., Muskogee, Okla., CA $393,054, est. $453,834, grade, drainage 7.112 mi. U.S. 69 north of McAlester, Pittsburg Co.;

Imperial Paving Co., 700 E. Grand Ave., Oklahoma City, Okla., CA $335,720, est. $305,709, stabil. aggregate base with b. conc. surf., 2.06 mi. Hy. 74, at Norman, Cleveland Co.;

Palleson Constr. Co., 2808 N.W. 18th St., Oklahoma City, Okla., CA $64,706, est. $72,321, grade, drainage 4.001 mi. U.S. 70 east of Waurika, Jefferson Co.;

Park Ward Co., Commerce Exchange Bldg., Oklahoma City, Okla., CA $156,569, est. $150,592, b. conc. resurf. 6.894 mi. Hy. 52 east of Morris, Okmulgee Co.;

Standard Paving Co., 2119 E. 11 St., Tulsa, Okla., CA $175,176, est. $166,835, b. conc. resurf. and wid'n. 5.594 mi. U.S. 66 east of Tulsa, Tulsa Co.;

T & R Constr. Co., Surety Bldg., Muskogee, Okla., CA $80,206, est. $90,409, grade, drainage 7.857 mi. U.S. 70 east of Davidson, Tillman Co. Grand total $1,444,148. Bids Sept. 14, awarded Sept. 15. CD 9/2.

▲ **Oklahoma Gas & Electric Co.**, 321 N. Harvey St., Oklahoma City, Okla. Owner Builds. $1,000,000. 88 mi. 161,000 bolt line from Harrah to Muskogee, OKLAHOMA. Awarded Sept. 15. CD 8/3.

▲ **TEXAS**—State Hy. Comn., Austin,

Adams Bros., P. O. Box 271, Kaufman, Tex., LB $134,287 grading, structures, base, surf. 5.907 mi. Hy. FM 877 and 1181, Proj. S 1990 (1), etc., Ellis Co.;

Austin Bridge Co., P. O. Box 1590, Dallas, Tex., LB $79,544, grading, structures, base, surf. 0.454 mi. Hy. FM 523, Proj. C 1003-1-14, Brazoria Co.; LB $176,218, grading, structures, base, surf. 1.287 mi. Hy. FM 109, Proj. C 716-2-7, Colorado Co.;

Ballenger Constr. Co., P. O. Box 943, San Benito, Tex., LB $456,996, two course surf. tr. and b. conc. 14.659 mi. Hy. US 281, Proj. C 220-2&3-5&7, Hidalgo and Cameron Counties;

Bell, Braden, Barker & Gilvin, Inc., P. O. Box 2268, Amarillo, Tex., LB $172,154, grading, structures, base, surf., 16.794 mi. Hy. FM 788 and 400. Proj. S 1952 (1), etc. Hale Co.;

B. G. Brown & Co. and J. A. Pruit, 1615 S. Madison St., San Angelo, Tex., LB $132,350, grading, structures, base, surf., 8.114 mi. Hy. FM 587 and 1477, Proj. R 1036-2&1, etc., Eastland and Comanche Counties;

R. C. Buckner, P. O. Box 609, Jacksonville, Tex., LB $98,952, grading, structure, base, surf. 2.804 mi. Hy. FM 421, Proj. C 813-3-4, Hardin Co.;

R. B. Butler, Inc., & J. H. Howard, P. O. Box 471, Bryan, Tex., LB $93,416, grading, bridge, bridge widen, foundation course, one course surf. tr. 1.401 mi. Hy. ST 94, Proj. C 319-2-12, Trinity Co.;

Cage Bros., 6959 San Pedro St., San Antonio, Tex., LB $98,620, grading, structures, base, surf. 7.999 mi. Hy. FM 2008, Proj. R 1648-5-1, Irion Co.;

Cooper & Woodruff, 222 Mays Bldg., Amarillo, Tex., LB $73,193, grading, structures, base, surf. 0.597 mi. Hy. FM 749, Proj. R 31-4-7, Gray Co.;

W. S. Crawford Co. & R. N. Adams, 5350 Montrose Dr., Dallas, Tex., LB **$229,369,** grading, structures, base, surf. 11.456 mi. Hy. FM 1830, 1078 and 1172, Proj. S 1988 (1), etc., Denton Co.;

J. M. Dellinger, A. Partnership, P. O. Box 4227, Corpus Christi, Tex., LB **$175,857,** flexible base, two course surf. tr. 15.108 mi. Hy. SH 113, Proj. S 1997 (1) and (2), Refugio Co.;

Gulf Bitulithic Co., P. O. Box 2572, Houston, Tex., LB **$232,892,** shell concrete base, foundation course, b. conc. pavement and two course surf. tr. Hy. FM 1960, 7.063 mi. Proj. C 1868 (1), Harris Co.;

E. W. Hable & Sons, P. O. Drawer 650, Corsicana, Tex., LB **$62,975,** grading, structure, base, surf. 4.569 mi. Hy. FM 321, Proj. R 892-1-3, Anderson Co.;

Killian-House Co., 4600 Broadway, San Antonio, Tex. LB **$79,998,** grading, structures, base, surf. 9.857 mi. Hy. FM 140, Proj. S 1455 (1), Atascosa Co.;

L. H. Lacy Co., 5630 Yale Blvd., Dallas, Tex., LB **$624,743,** c. conc. 6.345 mi. Hy. US 81, Proj. FI 473 (12), Tarrant Co.;

Ernest Loyd, P. O. Box 1120, Fort Worth, Tex., LB **$178,922,** grading, structures, base, surf. 10.207 mi. Hy. FM 1201, Proj. S 1969 (1), Cooke Co.;

R. W. McKinney, P. O. Box 190, Nacogdoches, Tex., LB **$76,399,** grading, structures, base, surf. 4.231 mi. Hy. FM 981, Proj. S 1285 (1), Collin and Fannin Counties;

Hugh McMillan, P. O. Box 1227, El Paso, Tex., LB **$69,574.** base, two course surf. tr. 9.443 mi. Hy. US 80, Proj. FI 558 (13), Hudspeth Co.;

C. Hunter Strain, P. O. Box 1057, San Angelo, Tex., LB **$278,033,** flexible base, resurf. with hot mix b. conc. 15.144 mi. Hy. US 81 and Loop 2, Proj. FI 139 (9) and (10), McLennan Co. Bids Sept. 14. CD 8/31, 8/23.

▲**TEXAS**—State Hy. Comn., Austin,

Bell, Braden, Barker & Gilvin, Inc., P.O. Box 2268, Amarillo, Tex., LB **$71,249,** grading, structures, culvert, lengthen bridge, widen foundation course and two course surf. tr. 1.056 mi. Hy. U.S. 87, Proj. C 40-1, 2 & 3-15, etc., Dallam Co.;

Marvin Brown, Inc., P.O. Box 4117, Houston, Tex., LB **$74,010,** widen c. conc. pavement and b. conc. pavement 1.913 mi. Hy. U.S. 290 and SG 36, Proj. C 114-9 & 10, Washington Co.;

John F. Buckner & Sons, P.O. Box 76, Cleburne, Tex. LB **$88,195,** grading, structures, base, surf. 5.933 mi. Hy. FM 1947, Proj. R 1830-1-1, Hill Co.;

Cage Bros., 6959 San Pedro St., San Antonio, Tex., LB **$134,401,** grading, structures, base, surf. 7.848 mi. Hy. FM 1038 and 1278, Proj. R 760-1-3, etc. Cottle Co.; LB **$138,457,** grading, structures, base, surf. 12.909 mi. Hy. FM 821, Proj. S 1602 (2), Howard Co.;

Cooper & Woodruff, 222 Mays Bldg., Amarillo, Tex., LB **$143,142,** grading, structures, base, surf. 9.247 mi. Hy. FM 2007, 2006, etc., Proj. S 1936 (1), etc., Hardeman Co.;

W. S. Crawford Co. & R. N. Adams, 5350 Montrose Dr., Dallas, Tex., LB **$168,333.** grading, structures, base, surf. 5.951 mi. Hy. FM 1385 and 2164, Proj. R 1315-1-6, etc., Denton Co.;

Heldenfels Bros., P.O. Box 1917, Corpus Christi, Tex. LB **$115,930,** foundation course, two course surf. tr. 9.897 mi. Hy. SH 234 and FM 2187, Proj. S 1968 (1), San Patricio Co.;

M & N Constr. Co., Inc., P.O. Box 12306, Houston, Tex. LB, **$305,033,** flexible base, b. conc. 0.792 mi. Hy. US 75 and FM 528, Proj. FI 466 (29), etc., Harris Co.;

R. W. McKinney, P.O. Box 190, Nacogdoches, Tex., LB, **$192,050,** grading, structures, base, surf. 7.604 mi. Hy. FM 1377, Proj. R 1391-1-4, Collin Co.;

McMillan-Burkett Constr. Co., P.O. Box 1161, Texarkana, Tex., LB, **$76,018,** grading, structures, base, surf. 4.48 mi. Hy. FM 2198, Proj. R 208-4-1, Harrison Co.;

Holland Page, P.O. Box 1181, Austin, Tex., LB, **$284,-059,** widen, flexible base, two course surf. tr. 16.584 mi. Hy. US 377 and SH 41, Proj. C 201-5-6, Edwards Co.;

M. E. Ruby, San Marcos, Tex., LB, **$85,846.** grading, structures, base, surf. 8.984 mi. Hy. FM 1174, Proj. R 1349-2-1, Burnet Co.;

Texas Bitulithic Co., P.O. Box 10365, Dallas, Tex., LB, **$1,142,999,** roadbed tr. and c. conc. 2.531 mi. Hy. US 67, Proj. FI 800 (8) and FGI 800 (9), Hunt Co.; cancelled bids to have been opened Sept. 15, grading, structures, base, surf. 5.3 mi. Hy. FM 1694, Proj. S 1974 (1), etc. Nueces Co. CD 8/23, 8/31.

▲† **Eckert Fair Constr. Co.,** Box 1334, Fort Sill, Okla. CA, **$1,512,644,** est. $1,571,083, Lot 1, jet engine cells; CA, **$215,757,** est. $254,800, Lot 2, jet engine facilities, Amarillo Air Force Base, ENG-34-066-55-8, AMARILLO, TEX. U. S. Eng., Box 61, Tulsa 2, Okla. Bids Sept. 9, awarded Sept. 16. CD 9/15, under LB.

Karnes County Road Dist., Court House, Karnes City, Tex., Own Forces. **$110,000,** general imprvs. to roads, drainage, surf., grading; **$60,000,** 16 mi. farm-to-market road imprvs. in Precinct 4; **$60,000,** repairs, imprvs. to portions several roads inside Precinct 4, KENEDY, TEX. Grand total $230,000. CD 9/15/53.

Thompson Pipe & Steel Co., 3001 Larimer St., Denver, Colo., CA, **$618,073,** for pipe; supplying, installing approx. 62,300 lin. ft. 27 in. water supply line and 640 lin. ft. 24 in. water supply pipe line, FORT COLLINS, COLO. City, City Hall, Fort Collins, Colo. Bids Sept. 10. CD 9/2.

† **J. W. Jones Constr. Co.,** Box 8038, Albuquerque, N. M., CA **$615,090,** constr. and paving roads for Terminal area, 66-mi., White Sands Proving Ground, Serial No. ENG-29-005-55-6, ALAMOGORDO, N. M. U. S. Eng., Box 1538, Albuquerque, N. M. Bids Sept. 8. CD 9/15, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Arthur G. McKee & Co.,** E. 23 St. and Chester Ave., Cleveland, O. CA design and construct taconite pelletizing equipment at E. W. Davis Works;

Allis-Chalmers Mfg. Co., 8945 70 St., Milwaukee, Wis. CA mfg. equipment, SILVER BAY, MINN. Total est. $19,000,000. Reserve Mining Co. (Republic Steel Co., Cleveland, O., National Steel Co., Pittsburgh, Pa., and Armco of Middleton, O.), Managed by Ogle-bay-Norton & Co., Hanna Bldg., Cleveland, O.

Johnson Constr. Co., 1329 S. Clay St., Springfield, Mo. CA **$306,560.** 2 elementary SCHOOLS, one on Blaine and Weller Sts.; and other on North Freemont St., SPRINGFIELD, MO. Bd. Educ., Reorganized School Dist. 12, James A. Jeffries, pres., 940 N. Jefferson St., Springfield, Mo. Eugene F. Johnson & Assoc., Architects & Engineers, Inc., 400 E. McDaniel St., Springfield, Mo., archt. CD 1/20/53.

▲ **Mission Development Co.,** Mission, Kan. Owner Builds. **$1,000,000.** SHOPPING CENTER, MERRIAM, KAN. CD 8/20.

Berl Dodd, Broken Arrow, Okla., Purchase and Hire. **$540,000.** 54 HOUSES in Dodd's Addn., BROKEN ARROW, OKLA. Awarded Sept. 14.

A. Z. Waters, Tri-State Bldg., Tulsa, Okla., Purchase and Hire. **$450,000.** 44 HOUSES, in Economy Gardens Addn., TULSA, OKLA. Awarded Sept. 14.

Homes, Inc. of Texas, 2711 Inwood St., Dallas, Tex., Owner Builds. **$315,000.** 36 addnl. DWELLINGS, DALLAS, TEX. CD 9/1.

Williams & Dunlay Housing Corp., Odessa, Tex., Owner Builds. **$341,150,** 35 DWELLINGS, ODESSA, TEX. CD 9/1.

Whiteside & Bassett, 3109 N. Muskingum St., Odessa, Tex. Owner Builds. **$331,000.** 36 addnl. DWELLINGS, ODESSA, TEX. CD 9/1.

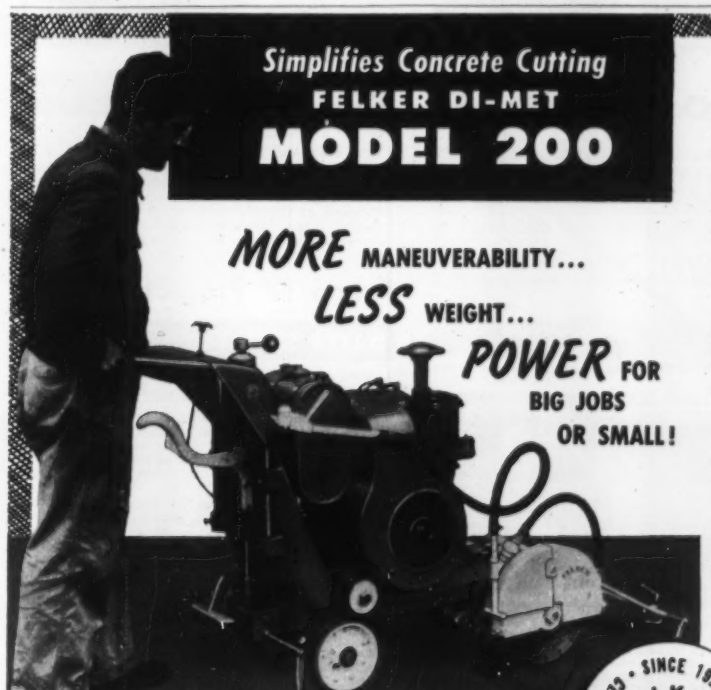
San Antonio Building Co., 511 S. Texas Bldg., San Antonio, Tex., Force Account. **$310,000,** 24 frame DWELLINGS; **$325,000,** 36 frame DWELLINGS, SAN ANTONIO, TEX. CD 9/1.

▲ **Rosenthal Brothers, Contractors,** 2501 Vance-Jackson Rd., San Antonio, Tex., Owner Builds. **$310,675,** 16 all-masonry DWELLINGS; **$355,000,** 22 frame, masonry DWELLINGS; **$338,500,** 20 frame, brick DWELLINGS, asb. siding, SAN ANTONIO, TEX. Grand total $1,004,175. CD 9/2.

McClellan Constr. Co., Box 448, Waco, Tex., CA **$841,-000.** BANK and OFFICE, WACO, TEX. First National Bank, Amicable Bldg., Waco, Tex. Bids Aug. 24. CD 8/30, under LB.

▲ **Mead & Mount Constr. Co.,** Railway Exchange Bldg., Denver, Colo., CA, **$4,500,000.** HOTEL APARTMENT and SHOPPING CENTER on present site of Mountain

Simplifies Concrete Cutting
FELKER DI-MET
MODEL 200



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This new DI-MET Model 200 is available as a BASIC UNIT or may be purchased with additional accessories. POWER DRIVE and COOLANT PUMP ASSEMBLIES can be field installed. STARTER, GENERATOR and BATTERY must be ordered with the ENGINE. Choose what you *need*, buy what you *want!*

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Made by the *only* manufacturer building both CONCRETE CUTTING MACHINES AND DIAMOND WHEELS... the winning combination that means *more* footage at *less* cost!

View Golf Course, BOULDER, COLO. John D. & Clint Murchison, 1201 Main St., Houston, Tex. R. Ervin, Patterson Bldg., Denver, Colo., archt. and engr.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION

† **Arizona-Nevada**—SWITCH—BA 10/14—Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo., Sch. 1, Item 1, horn-gap switch; Sch. 2, Item 2, disconnecting switch for Gila Sub-station, Davis Dam Proj. Spec. DS 4244. L. N. McClellan, asst. comr. and ch. engr.

BIDS ASKED—BUILDINGS

▲ **Calif., Los Angeles**—SCHOOL—BA 10/19—Los Angeles City Bd. Educ., 1425 S. San Pedro St., Fulton Junior High School addn. $1,056,000. Marsh, Smith & Powell, 208 W. 8 St., archts. CD 6/13/52.

▲† **Wash., Fort Lewis**—BARRACKS, etc.—BA 10/26—U. S. Eng., 4735 East Marginal Way, Seattle, Zone 4, 10 rein.-con., masonry barracks, ENG-45-108-55-42. Plans deposit $25. CD 11/7/51.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

IDAHO—State Hy. Dpt., Boise,

Eagle Constr. Co., 3020 Main St., Boise, Idaho, LB $374,224. roadway, bit. surf., 37 ft. concrete overpass and concrete bridge 2.815 mi. U. S. 30 Elmore Co.

† **R. A. Heintz Constr. Co.**, 211 N. E. Columbia Blvd., Portland, Ore., LB $849,861. grade and drainage 6.1 mi. U. P. tracks and 5.4 mi. U. S. 30, The Dalles Dam Proj., CIVENG-35-026-55-26, Sherman Co., OREGON. U. S. Engs., Pittock Block, Portland, Ore. Bids Sept. 14. CD 8/4.

† **T. M. Page Corp.**, 145 W. Duarte Rd., Monrovia, Calif., CA, $314,464. Auburn, Bailey and Carter Debris Basins, Arcadia Wash System. CIVENG-04-353-55-8, CALIFORNIA. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids Sept. 9. awarded Sept. 9. CD 9/9, under LB.

Robert C. Watson, 1824 Coro Terrace, Glendale, Calif., LB, $159,133. excavation and appurtenant work in Los Cerritos Channel from Atherton St. to Alamitos Bay, Long Beach, LOS ANGELES, CALIF. Los Angeles County Flood Control District, 2250 Alcazar St., Los Angeles, Calif. Bids Sept. 10 CD 8/24.

BUILDINGS

LOW BIDS AND CONTRACTS

Brazier Constr. Co., 309 Pontius St., Seattle, Wash., LB, $408,000 general contracts, steel, rein.-con. elementary SCHOOL, KENMORE, WASH. School District 46, Bothell, Wash. Bids Sept. 13. CD 8/26.

Flower & Shirley, 2150 Princeton Ave., Los Angeles, Calif., LB, $567,600 Dapple-Gray SCHOOL, PALOS VERDES, CALIF. Palos Verdes School Dist., 385 Via Almar, Palos Verdes, Calif. Bids Sept. 10.

Balch, Bryan. Perkins & Hutchason, 2933 Rowena Ave., Los Angeles, Calif., archts.

Firmona Constr. Co., 15127 Crenshaw Blvd., Gardena, Calif., CA, $924,100, 109 frame. stucco DWELLINGS, 182, 183, 184, 185 Sts. and Firmona St., REDONDO BEACH, CALIF. CD 9/9.

CANADA

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **Calgary Power Ltd.**, 140 First St., Calgary, Alta., Owner Builds. $5,000,000, 88,660 hp. steam generating PLANT, Wabamun, ALBERTA. CD 1/4, under Public Buildings, Alta., Calgary.

BUILDINGS

LOW BIDS AND CONTRACTS

Christensen & McDonald, 612 Tegler Bldg., Edmonton, Alta., CA, $674,000. 40 STORES, EDMONTON, ALTA. Shoppers Park Wesmount Ltd., Edmonton, Alta. C. Melvin Frank, 42 W. Long St., Columbus, O., U.S.A., archt. CD 8/18/53.

Grimwood Ltd., 1129 Kingsway, Vancouver, B. C., CA, $813,255, CHILD GUIDANCE CENTER, incl. hospital, BURNABY, B. C. B. C. Govt., Parliament Bldgs., Victoria, B. C. Bids July 29. CD 7/16.

D. W. Gilbertson, 83 Ottawa St. S., Hamilton, Ont., Owner Builds, $300,000, 16 unit APARTMENTS, HAMILTON, ONT.

▲ **Dickie Constr. Co. Ltd.**, 17 Yorkville Ave., Toronto, Ont., CA Approx. $1,000,000, BOILER PLANT, STORAGE SHEDS, KILNS, PLANING MILL and WORKSHOP, and 250,000 gal. reservoir, Oak St. near Weston Rd., TORONTO, ONT. R. Laidlaw Lumber Co. Ltd., 2280 Dundas St. W., Toronto, Ont. Awarded Sept. 14. Pentland, Mac Farland & Baker, 490 Jarvis St., Toronto, Ont., and Wallace, Carruthers & Assocs., Ltd., 35 Isabella St., Toronto, Ont., archts.

J. M. Jeanson Ltd., 912 St. Louis St., Sherbrooke, Que., CA, $179,460, concrete, steel, brick Printing and Publishing PLANT addn., SHERBROOKE, QUE. Page Sangster Printery Ltd., 85 Albert St., Sherbrooke, Que. A. Belanger, 46 Vimy St., Sherbrooke, Que., archt.

▲ **Lang Constr. & Building Products Ltd.**, Regina, Sask., Owner Builds, $2,500,000, 190-unit APARTMENT, REGINA, SASK.

ALASKA

BUILDINGS

LOW BIDS AND CONTRACTS

▲† **Grove, Shepherd, Wilson & Kruge, Inc.**, 400 Madison Ave., New York 17, N. Y. CA $1,581,592. 160,000 sq. ft. rein.-con., masonry general WAREHOUSE with railroad spur and outside utilities, ENG-95-507-55-5, FORT RICHARDSON, ALASKA. U. S. Eng., Anchorage, Alaska. Bids Sept. 2, awarded Sept. 15. CD 9/9, under LB.

LATIN AMERICA

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **Raymond Concrete Pile Co.**, 140 Cedar St., New York, N. Y., CA Approx. $25,000,000-$30,000,000. tunnel under entrance to Havana Bay, HAVANA, CUBA. Compania de Comento del Tunel de la Havana S. S., Havana, Cuba. Palmer & Baker, Inc., Natl. Bank of Commerce Bldg., New Orleans, La., U. S. A., engr. CD 3/27/50.

Proposed Projects

WATER SUPPLY

▲ **Minn., St. Paul**—City, City Hall, $5,500,000 bond election Nov. 2, WW imprvs. CD 3/16.

O., **Newport**—City, water collections in Ohio River, mains. $500,000. Oscar Hersch, city mgr.

▲ **Tex., Arlington**—City, voted bonds Sept. 11, WW pumping station unit, $275,000; water supply lake, $1,975,000; water main, lake to city limits, $300,000. Freese & Nichols, 407 Danciger Bldg., Fort Worth, consult. engrs. CD 7/6.

† **Alaska, Fairbanks**—Alaska P. Wks., Dpt. Interior, Juneau, bldg. 1 pumping station and rehabilitate another, with 15,600 ft. 6- to 24-in. wood stave pipe. $500,000. R. W. Beck & Assocs., Tower Bldg., Seattle 1, Wash., consult. engrs. CD 7/30/45.

SEWERS, WASTE DISPOSAL

Mich., Hamtramck—City, Mayor Albert J. Zak, 3201 Roosevelt, $500,000 bond election Nov. 2, municipal incinerator and garage. CD 12/11.

▲ **Neb., Omaha**—City, City Hall, 18 and Farnam Sts., $5,000,000 bond election Nov. 2, sewer constr. various points. E. W. Woodbridge, city engr. CD 10/28/52.

O., **Sabina**—Village, sewage treatment plant and sanitary sewer lines, $550,000. Alfred LeFeber & Assoc., 2933 Woodburn Ave., Cincinnati, consult. engrs.

▲ **Tex., Arlington**—City, voted bonds Sept. 11, sanitary sewer collection lines, $750,000; sanitary sewerage sys. rehabilitation, $175,000; sewage disposal plant, $200,000; storm sewers, $200,000. Freese & Nichols, 407 Danciger Bldg., Fort Worth, consult. engrs. CD 7/6.

No clutter or confusion at paving site. Premixed concrete delivered by Dumpcretes ready for placing.

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Non-agitated Hauling Meets Every Test

On sections C-2 and C-3 of the Ohio Turnpike there's no clutter at the paving site. No paver, no water trucks, no men to run them.

Just spreaders and finishers, plus a Dumpcrete or two discharging 4 yards of premixed concrete in 60 seconds.

The automatic central mixing plant is midway on the 10-mile job. Three men run it. 14 Dumpcretes haul its 95,000 yd. production.

Here's the bonus. The single plant supplies concrete for bridges, culverts, walls and widening as well as paving.

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Central mixing plant located midway on job.

Slump, cylinder, beam and air test (above) all O.K.

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695 Talbott Building, Dayton 2, Ohio

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Name_____

Firm_____

Street_____

City_____

MAXON DUMPCRETE

Fastest from plant to pour

Utah, Pleasant Grove—Pleasant Grove City Corp., Pleasant Grove, sewerage sys. $500,000. Caldwell, Richards & Sorenson, 408 Zion Saving Bank Bldg., Salt Lake City, consult. engrs.

Que., Three Rivers—City, collector sewers in Parish of Ste. Marguerite, $700,000. R. Lord, city mgr.

BRIDGES

Ill., Chicago—City, City Hall, bridge imprvs. over Chicago River, Michigan Ave., $500,000; bridge imprvs. over Chicago River at Clark St., $120,000. Stephen Michuda, City Hall, city engr.

▲ SOUTH CAROLINA—State Hy. Dpt., Columbia,
Beaufort Co.—bridge over Brad River, $750,000.
Charleston Co.—7 bridges on Rtes. 703, 174 and 514, $1,000,000. V. Barstow, 152 W. 44 St., New York, N. Y., consult. engrs.

STREETS AND ROADS

▲ SOUTH DAKOTA—State of S. D., Pierre, and Bureau Indian Affairs, Dpt. Interior, Interior Bldg., 19 and C Sts., N.W. Wash. 25, D. C.
Cheyenne Indian Reservation road imprvs. $303,900.
Crow Creek and Lower Brule Indian Reservations road imprvs. $176,000.
Pine Ridge Indian Reservation road imprvs. $894,600.

▲ Tex., Arlington—City, voted bonds Sept. 11, street paving, imprvs. $1,250,000. Freese & Nichols, 407 Danciger Bldg., Fort Worth, consult. engrs. CD 7/6.

EARTHWORK, WATERWAYS

† Iowa—U. S. Eng., 1709 Jackson St., Omaha, Neb., flood prevention work along Gordon Drive, Sioux City, at Missouri River. $500,000. CD 6/9/44.

† Nebraska—U. S. Eng., 1709 Jackson St., Omaha, dikes and revetment along Missouri River just north of city of Omaha. $500,000. CD 6/1/44.

▲ Texas—Van Zandt Water Dist. No. 1, Roy W. Curtis, Wills Point, dam and lake to provide drainage and promote industrial growth in the area, drainage area will cover 800 sq. mi and have lake capacity of 940,000 acre ft., $22,500,000; clearing and grubbing lake area, $200,000, foregoing in Wills Point area. J. M. Lloyd, Tyler, Tex., consult. engr. Gibb Gilchrist, Wills Point, consult. engr. CD 9/2.

Ont., Windsor—City Council, Mayor A. Reaume, steel piling and concrete retaining wall along the river front (ferry dock area), $500,000. M. M. Dillon, 132 Maple St., London, consult. engr. C. G. R. Armstrong, Bartlett Bldg., engr.

AIRPORTS

▲† Calif., Muroc—TEST FACILITY, etc.—U. S. Eng., 751 S. Figueroa St., Los Angeles, qualifications test facility, $170,000; high pressure gas storage system, $300,000; propellant storage facilities, $60,000; 700,000 lb. thrust test stand, $800,000; at Edwards Air Force Base Aerojet-General Corp., 6352 N. Irwindale St., Azusa, consult. engrs. CD 8/30.

Fla., Clearwater—ADMINISTRATION BLDG.—Pinellas Co. Comn., Court House, administration bldg., at Pinellas County International Airport. $100,000.

▲† Okla., Oklahoma City—WAREHOUSES—U. S. Eng., Box 61, Tulsa Zone 2, (A)-Lot I, 320,000 sq. ft. warehouse in Area "A", slab on grade, incl. concrete drives, paved areas, railway spur, drainage ditches, underground utilities, etc. $2,875,000; (B)-Lot 2, 80,000 sq. ft. Warehouse, T-416 addn. floor slab on grade, concrete, masonry, rein.-con. frame constr., railway spur, drainage, area paving, underground utilities, etc. $700,000, at Tinker Air Foce Base.

▲† Tex., Laredo — AIR FORCE FACILITIES — U.S. Eng., Box 1229, Galveston, plans by Roy W. Leibsle, arch.-engr., 3702 Almeda St., Houston, designing Air Force Base Facilities, Laredo Air Force Base. $5,000,000. CD 6/26/51.

▲† Tex., Victoria—FACILITIES—U. S. Eng., Box 229, Galveston, plans by Wilson, Morris & Crain & Assocs., archts.-consult. engrs., 3330 Graustark St., Houston, designing Air Force Facilities for Victoria Air Force Base. $5,000,000. CD 11/28/52.

† Va., Oceana—AUDITORIUM—Dpt. Navy, P. Wks. Office, Fifth Naval Dist., Norfolk, plans by Clarke, Buhr & Nexsen, Midtown Bldg., Norfolk, 1½ story, 30,000 sq. ft. concrete, masonry, back-up, structural steel auditorium and navy exchange bldg., at Naval Air Station, $800,000. CD 4/21.

▲† Wash., Seattle — RUNWAY — Dpt. Navy, Bureau Yards & Docks, Arlington, Va., 1,950 ft. runway addn., Sand Point Naval Air Station, $7,000,000.

Wyo., Casper—AIR TERMINAL—Natrona Co. Bd. Comn., $500,000 bond election Nov. 2, airport terminal.

PUBLIC BUILDINGS

Calif., Cupertino—SCHOOL—Cupertino Union Elementary School District, Cupertino, New Homestead School, $663,732.

Calif., Miranda—SCHOOL—Southern Humboldt Unified School Dist., Miranda, South Fork High School, South Fork, $898,000.

Calif., San Lorenzo—SCHOOL—San Lorenzo Elementary School Dist., 2 and Sycamore Sts., Bay School $504,286; plans by Schmidts & Hardman, 1320 University Ave., Berkeley, Hillside (Maubert) School, $400,000.

▲ Calif., Santa Monica—CIVIC AUDITORIUM—City, City Hall, $2,850,000 bond election Nov. 2 civic auditorium. Kliegman & Leizer, 8588 Melrose Ave., Los Angeles, and Barlenbrock & Murray, 600 Wilshire Blvd., Santa Monica, archts.

▲ Calif., Willits—SCHOOL—Willits Union High School Dist., Willits, Willits High School. $679,500; Laytonville High School addn., $325,000. CD 10/22/48.

Ill., Barrington—SCHOOL—School District No. 22, 616 W. Main St., plans by Perkins & Will, 309 W. Jackson Blvd., Chicago, Zone 6, high school addn. $850,000.

Ill., Woodstock—POWER PLANT—City, City Hall, power plant, First and Wheeler Sts. $500,000. Suner Sollitt Eng. Co., 307 N. Michigan St., Chicago, Zone 1, consult. engr.

▲ Ia., Des Moines—COUNTY HOME—Polk Co., Court House $1,428,000 bond election Nov. 2, county home Woodburn & O'Neil, 215 Jewett Bldg., archts.

Ia., Des Moines—SCHOOL—Saydel Consolidated School District, East 14 and Broadway, plans by Smith-Voorhees-Jenser-Silleto & Assocs., Davidson Bldg., Junior-Senior High School $600,000. bonds voted.

Mich., Paw Paw—JAIL—Van Buren Co., Lyle Parker, Bd. Supervs., Paw Paw, plans by Ivan N. Cuthbert, Ann Arbor, county jail, $500,000. CD 8/23.

Minn., St. Louis Park—CIVIC CENTER—Village, J. Justad, clk., $550,000 bond election Nov. 2, civic center, incl. group bldgs., village hall, Brandhorst & Leadhelm, St. Louis Park, archts. CD 6/14.

▲ Mont., Bozeman—SCHOOL—Gallatin Co. High School Dist., $1,200,000 bond election Nov. 2, high school, Oswald Berg, Jr., 24 W. Main St., and Fred F. Wilson, 21 W. Babcock St., archts.

▲ N. J., Trenton—APARTMENT—Trenton Redevelopment Auth., City Hall, plans by Trenton Society of Architects, 36 Lafayette St., multi-story apartment, John Fitch Way, $1,000,000.

▲ N. Y., Eastchester—HIGH SCHOOL—Eastchester Bd. Educ. Dist. No. 1, Stewart Pl., plans by Eggers & Higgins, 100 E. 42 St., New York, Zone 17, Junior High School addn. $1,400,000.

N. Y., New York—LAUNDRY—Dpt. P. Wks., Municipal Bldg., Zone 7, plans by Fellheimer & Wagner, 155 E. 42 St., Zone 17, Bellevue Hospital Laundry alterations, 420 E. 29 St. $800,000. CD 1/29/43.

▲N. Y., Rego Park—SCHOOL—Bd. Educ., 49 Flatbush Ave. exten., Brooklyn, Zone 1, plans by W. F. R. Ballard, 123 E. 77 St., New York, Zone 21, Proj. E-889, P. S. 220 three story school, area bounded by 108 St., 62 Ave., Yellowstone Blvd. and 62 Rd. $1,530,000.

▲ O., Columbus—AUDITORIUM, etc.—Ohio State University, N. High St., plans by Bellman, Gillett & Richards, 518 Jefferson Ave., Toledo, limestone campus auditorium, $2,500,000; television station, $200,000. CD 1/22/53.

O., Norwalk—ELECTRIC PLANT—City, Henry E. Young, mayor, enlarge municipal electric plant from daily 7,000 to 14,500 kw. capacity. $500,000-$750,000.

▲ Pa., Meyersdale—SCHOOL—Meyersdale Joint School Dist., Meyersdale, plans by Herbert Spangler Miller, 1105 Cornell Ave., 1 story Junior-Senior High School. $1,500,000.

▲ Pa., Phila.—STATE OFFICE—General State Auth., 18 and Herr Sts., Harrisburg, plans by Carroll, Grisdale & Van Alen, 204 W. Rittenhouse Square, Harbeson, Hough, Livingston & Larson, Architects Bldg., and Nolen & Swinburne, 6316 Germantown Ave., state office bldg., Broad and Spring Garden Sts. $8,000,000. A. F. Jones, c/o owner, ch. engr. CD 4/26.

▲ Pa., Pittsburgh—SCHOOLS—Bd. Educ., Forbes and Bellefield Sts., plans by Rigamount & Steen, 5471 Pearl St., Roosevelt Grade School, Shady Ave., $1,475,000; plans by Altenhof & Bown, Park Bldg., Westwood Grade School, west end, $658,125; plans by Ingham, Boyd & Pratt, Empire Bldg., Pittsburgh, Clayton Grade School, Perrysville Ave., $1,153,000.

▲† Tex., El Paso—HOUSING—U. S. Eng., Box 1538, Albuquerque, N. M., troop housing, Fort Bliss. $11,178,000. CD 7/6/51.

▲† Tex., Fort Sam Houston—BLDGS., FACILITIES—U.S. Eng., Box 1229, Galveston, plans by Ralph H. Cameron, archt.-engr., 1519 Transit Tower, San Antonio, designing facilities, misc. bldgs., etc. $5,000,000.

▲ Tex., Houston—SCHOOLS—Houston Independent School Dist., 1300 Capitol St., plans by Stayton Nunn, co-ord. archt., 3272 Westheimer St., Senior High Schools No. 1, for Burrus Area, $1,450,000, No. 2 for Sunnyside-Grimes area, $775,000, No. 3 for Garden Villas-Foster area, $850,000; Junior High Schools, No. 1 for Kashmere Gardens, $750,000, No. 2 for Southwest bellaire, $950,000, No. 3 for Oak Forest, $550,000, No. 4 for Trinity Gardens, $700,000; Elementary Schools, No. 1, Finnegan Park area, $750,000, No. 2, new Southwest Bellaire area, $600,000, No. 3, Victoria Arlington area, $850,000, No. 4, Lamar Terrace area, $925,000. CD 7/30.

Utah, Logan—DORMITORY—Bd. Trustees, Utah State Agriculture College, Logan, womens dormitory. $600,000.

Wash., Pasco—SCHOOL—School District No. 1, Pasco, bond election Nov. 2, repairing or replacing Whittier Elementary School, $500,000.

† Alaska, Haines—SCHOOL—Alaska P. Wks., Dpt. Interior, Juneau, plans by L. A. Forrest, Juneau, school, $501,000. CD 6/21/51.

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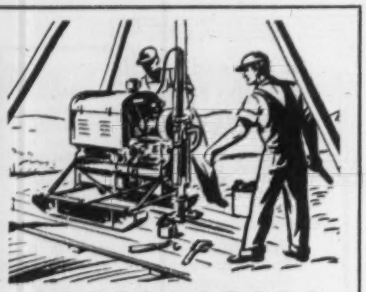

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▲† **Alaska, Juneau**—HIGH SCHOOL—Alaska P. Wks., Dpt. Interior, Juneau, plans by L. A. Forrest, Juneau, 2 story, rein.-con. high school. $2,000,000. CD 12/16.

† **Alaska, Sitka**—PIONEERS HOME—Alaska P. Wks., Dpt. Interior, Juneau, plans by L. A. Forrest, Juneau, 3 story bsmnt., rein.-con. Pioneers' Home Addn. $800,000. CD 8/26.

† **Alaska, Valdez**—HOSPITAL—Alaska P. Wks., Dpt. Interior, Juneau, plans by T. B. Bourne Assocs., Anchorage, rein.-con. hospital. $460,000. CD 8/26.

COMMERCIAL BUILDINGS

▲ **Calif., Los Angeles**—OFFICE—Tishman Realty & Constr. Co., c/o Victor Gruen, archt., 135 S. Doheny Dr., Beverly Hills, 13 story, rein.-con. office, 3325 Wilshire Blvd. $3,000,000. CD 7/8.

▲ **Calif., San Leandro**—SHOPPING CENTER—Bayfair, Inc., c/o Victor Gruen & Assocs., 971 Sutter St., San Francisco. Bayfair Shopping Center, Hesperian Blvd. and East 14 St. $20,000,000.

▲ **Del., Dover**—SUPERMARKET, etc.—Food Fair Stores, Inc., 2223 Allegheny Ave., Phila., Pa., 1st section supermarket and shopping center with parking lot, $1,000,000.

Ill., **Chicago**—SHOPPING CENTER—Owner, c/o Clarence Dahlquist, archt., 1625 Glenview St., Glenview shopping center, Devon, California to Mozart Sts. $500,000.

▲ **Ill., Kankakee**—HOSPITAL—Roy Robinson, Chn. Bldg. Comn., c/o Raymond F. Houlihan, archt., 30 N. Dearborn St., Chicago, Zone 2, hospital. $2,000,000.

Mass., **Lynn**—HOSPITAL—Lynn Hospital, 212 Boston St., plans by Markus & Nocka, engrs.-archts., 251 Columbus Ave., Boston, hospital alterations, modernization, new 4 story, 60x110 ft. wing, $500,000.

▲ **Mass., South Boston**—HOME—R. C. Archdiocese of Boston, Chancery Office, 1 Lake St., Brighton,, Marian Village-Home for the Aged, on site of old Carney Hospital, $1,500,000.

▲ **Mo., Clayton** (St. Louis 5 P.O.)—OFFICE—Phil L. Siteman, 7410 Wellington Way, St. Louis, Zone 5, 5 story office, on 80x190 ft. site, Carondelet and Bemiston Aves., incl. also extensive underground parking facilities. $1,500,000.

▲ **Mo., Springfield**—HOSPITAL—Burge Hospital, 440 S. Market St., plans by Esterly & Amspacher, McDaniel Bldg., hospital addn. $1,050,000. CD 9/9.

▲ **N. Y., New York**—APARTMENT—Sovereign Trade, Inc., 47 White St., Zone 13, plans by Paul Resnick, 654 Madison Ave., Zone 21, 15 story apartment, Lexington Ave. and 81 St. $2,250,000.

▲ **Pa., Phila.**—APARTMENT—Shelby Constr. Co., c/o Morris Henkin, 121 S. Broad St., will not construct apartment in Penn Center. $4,000,000. Project abandoned. Curtis & Davis, 338 Baronne St., New Orleans, La., archts. CD 5/10.

▲ **Pa., Willow Grove**—SHOPPING CENTER—Corp., c/o Albert J. Grosser, Lewis Tower Bldg., Phila., shopping center, Easton Rd. and Moreland Ave. $10,000,000.

▲ **Tex., Abilene**—DORMITORY, etc.—Abilene Christian College, Abilene, plans by Wilson, Patterson & Assocs., 605 Bailey Ave., Fort Worth, men's dormitory, $750,000; women's dormitory, $600,000. Yandell, Cowan & Love, Fort Worth Natl. Bank Bldg., Fort Worth, consult. engrs. CD 8/20.

Tex., **Austin**—BANK, etc.—Austin National Bank, 507 Congress St., plans by Kuehne, Brooks & Barr, Perry-Brooks Bldg., 4 story drive-in bank and storage garage. $750,000.

▲ **Tex., Houston** — SHOPPING CENTERS — Luton & Arnold, 4207 Byron St., plans by Harvin C. Moore, 2006 W. Alabama St., Proj. 1, masonry shopping center, with one long bldg. with smallers ones on each end, $1,750,000; Proj. 2, concrete, steel shopping center, one long bldg., smaller ones on each end, $1,500,000, off North Loop.

▲ **Tex., Houston**—HOTEL—Hyatt Von Dehn, c/o Wm. Pereira & Charles Luckman, archts., 7421 Beverly St., Los Angeles, Calif., 70-room hotel, near Houston's International Airport. $1,500,000.

Wash., **Edmonds**—HOSPITAL—Mountlake Terrace Community Hospital Assn., 23109 W. 55 St., hospital. $500,000.

▲ **Wash., Mount Vernon**—HOUSES—A. Balch, 8050 35 Ave. N.E. Seattle, 200 houses on Wedgwood addn. $2,000,000.

▲ **Man., Winnipeg**—OFFICE—Lishwol Ltd., 294 Kingsway, plans by Green, Blankerstein, Russell & Assocs., 222 Osborne St. W., office, Portage Ave. $3,500,000. CD 7/9.

▲ **Que., Chateauguay**—HOUSING—Old Orchard Home Co., c/o Bon-Ami Shulman, archt., 5174 Cote des Neiges Rd., Montreal, housing on new streets, $1,562,500.

INDUSTRIAL BUILDINGS

▲ **Ariz., Phoenix**—REFINERY—Navajo Refineries, Albuquerque, N. M., Arizona Refineries Co., Phoenix, Ariz., and Ar-Mex Pipe Line Co., Phoenix, Ariz., 10,000-bbl. daily capacity refinery, $4,000,000.

▲ **Ind., Fort Wayne**—STATION—Indiana & Michigan Electric Co., 2101 Spy Run Ave., enlarging McKinley Station, Miller Rd. with 100,000 kilowatts addnl. capacity; new sub-station at Spy Run plant; switching station at Lawton Park, $2,250,000. Martin Schoenfeld, c/o owner, supt. eng. CD 10/2/50.

▲ **Ky., Ford** — GENERATING UNIT — East Kentucky Rural Electric Co-operative Corp., Winchester, 66,000 kw steam generating unit at William C. Dale Power Station, $7,500,000. CD 12/16/49, under Kentucky.

▲ **Md., Cumberland**—PLANT—Pittsburgh Plate Glass Co., 632 Fort Duquesne Blvd., Pittsburgh, Pa., steel, rein-con., masonry plate glass plant, group of bldgs., $33,756,000, Lockwood Greene Engineers, Inc., 10 Rockefeller Plaza, New York, N. Y., engr.

Neb., Fremont—GRAIN ELEVATOR—W. N. Neff, A. W. Hill & H. M. Krupinsky, 522 N. Broad St., grain elevator. $600,000.

▲ **Neb., Lincoln**—GRAIN ELEVATOR—C-G Grain Co., National Bank of Topeka Bldg., Topeka, Kan., grain elevator. $2,000,000.

▲ **N. J., Atlantic City**—POWER PLANT—Atlantic City Electric Co., Kentucky and Pacific Aves., power plant at Beesley's Point, south of here, $18,000,000.

▲ **Tex., Houston**—GARAGE—Tennessee Gas Transmission Co., Commerce Bldg., plans by Cowell & Neuhaus, 2303 LaBranch St., 8 story 2,500 auto capacity auto parking garage, Travis, Milam, McKinley and Lamar Sts. site. $2,250,000. H. E. Bovay, Jr., M. Esperson Bldg., consult. engr.

▲ **Va., Norfolk**—PLANT—Virginia Smelting Co., George T. Wrenn, ch. engr., West Norfolk, chemical mfg. plant. $1,000,000.

Alta., Etzikom—PLANT—New British Dominion Oil Ltd., 302 General Trust Bldg., Calgary, ammonia plant, $500,000. Ford-Bacon & Davis, 39 Broadway, New York, N. Y., U.S.A., engrs. CD 6/8.

UNCLASSIFIED

▲ **Arkansas**—RURAL DISTRIBUTION LINE—North Arkansas Electric Co-operative, Salem, 100 mi. rural distr. line and 15 mi. 33 kv transmission line and sys. imprvs., Fulton Co. $1,060,000. CD 12/1/48.

Colorado—RURAL DISTRIBUTION LINES—Yampa Valley Electric Assn., Steamboat Springs, 101 mi. rural distr. line, 50 mi. 69 kv transmission lines, 30 mi. 44 kv transmission line and 7,500 kva transmission sub-station. $965,000. CD 7/18/51.

▲ **Fla., Tallahassee**—NATURAL GAS SYSTEM—City, City Hall, natural gas system, $3,310,000. J. W. Goodwin Eng. Co., 2111 7 Ave. S., Birmingham, Ala., consult. engr. CD 8/29/52.

▲ **Kentucky** — TRANSMISSION LINES — East Kentucky Rural Electric Co-operative, Winchester, 422 mi. electric transmission lines, sys. imprvs., Clark Co. $5,799,400. CD 12/16/49.

▲ **Mo., Kansas City**—PARK—Jackson Co., Court House, Independence, 3,000 acre county recreational park just north of Prairie Lee Lake, $1,000,000. CD 8/10.

N. C., Rocky Mount—ELECTRIC DISTR. SYS.—City, electric distr. sys. addn. $600,000.

▲ **Okla., Stillwater** — ELECTRIC DISTR. SYS. — City, voted bonds Sept. 7, electric distr. sys. imprvs. $1,800,000. C. H. Guernsey & Co., 2701 N. Oklahoma St., Oklahoma City, consult. engrs. CD 8/25.

▲ **Texas, New Mexico, Arizona**—OIL PIPE LINE—Navajo Refineries, Albuquerque, N. M., Arizona Refineries, Phoenix, Ariz. and Ar-Mex Pipe Line Co., Phoenix, Ariz., Jack Frost, pres., Albuquerque, N. M., crude oil pipe line running from near Wink, Tex., through New Mexico and to Phoenix, Ariz. $25,000,000.

▲ **Texas**—OIL LINE—Standard Oil Co. of Texas, City Natl. Bank Bldg., Houston, laying submarine crude oil line from offshore to point in Gulf near Padre Island, 24 mi. southwest of Corpus Christi, $3,000,000; laying pipe line to oil field off shore from the mainland, $400,000.

▲ **Tex., Houston**—WHARVES, etc.—Port Commission Navigation Dist., c/o Wharf 13, large hard type paved parking area for customers and employees, $225,000; 3 marginal tracks, $150,000; 3 railway tracks behind warehouses, $200,000; truck-loading facilities, $300,000; Job No. 1, 600 ft. uncovered type wharf, $2,000,000; Job No. 2, 600 ft. uncovered type wharf, $2,000,000; Job No. 3, 600 ft. uncovered type wharf, $2,000,000; Job No. 4, 600 ft. uncovered type wharf, $2,000,000; Job No. 5, 600 ft. uncovered type wharf, $2,000,000; Job No. 6, 800 ft. wharf, with transit shed, $2,200,000; Job No. 7, 800 ft. wharf with transit shed, $2,200,000; Job No. 8, 600 ft. wharf, with transit shed, $2,200,000; Job No. 9, 600 ft. wharf with transit shed, $2,200,000; Job No. 10, 600 ft. wharf with transit shed, $2,200,000; Job No. 11, 600 ft. wharf with transit shed, $2,200,000; Job No. 12, 600 ft. wharf with transit shed, $2,200,000; Job No. 13, 600 ft. wharf with transit shed, $2,200,000; Job No. 14, 600 ft. wharf, with transit shed, $2,200,000; Job No. 15, 600 ft. wharf with transit shed, $2,200,000, Lockwood & Andrews, Union Natl. Bank Bldg., and Robert J. Cummins, Bankers Mortgage Bldg., consult. engrs.; 1,000,000 sq. ft. covered storage space at dockside, $3,000,000; 500-car railway storage yard, $1,750,000. CD 4/29.

† **Alaska, College**—UTILIDORS, etc.—Alaska P. Wks., Dpt. Interior, Juneau, rehabilitate and expand utilidors, fire protection, electrical distr., steam and water mains, $567,500. Alaska Architectural & Eng. Co., Fairbanks, consult. engrs. CD 8/26.

† **Alaska, Kodiak**—POL FACILITIES—P. Wks. Office, 17th Naval Dist., Box 38, Navy No. 127, c/o Postmaster, Seattle, Wash., plans by Earl & Wright, archts.-consult. engrs., 233 Sansome St., San Francisco 4, Calif. POL facilities, U. S. Naval Station, NOY 77058. $700,000. CD 9/24/51.

Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
STREETS AND ROADS
October 5 Massachusetts

BIDS ASKED—BUILDINGS

▲ **Conn., Mansfield**—PATIENT BUILDINGS—BA 10/13—State, Ralph G. Macy, P. Wks. Comr., State Office Bldg., Hartford, Proj. BI-X-85, Boy Patient Bldg., $700,000; Proj. BI-X-86, Girl Patient Building No. 2, both at State Training School, $700,000. Plans deposit $40 each. Smith & Persse, 956 Chapel St., New Haven, archts. CD 1/16/52.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **MASSACHUSETTS**—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,

Coleman Brothers Corp., 40 Central St., Boston 9, Mass. LB $1,281,121. hy. and bridge, FI-1 315 (7), Billerica and Chelmsford. Bids Sept. 21. CD 9/2.

† **Platt Contr. Co., Inc.**, 99 First St., Cambridge, Mass. CA $954,369, est. $800,000. constr. State Air Terminal Complex, AF 604-55-5, BEDFORD, MASS. Air Force Cambridge Research Center, Air Research & Development Command, 224 Albany St., Cambridge, Mass. CD 8/10, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Jesse Hartman**, c/o Philip Birnbaum, archt., 12 E. 48 St., New York 17, N. Y. Owner Builds, $2,000,000, 300 family APARTMENT on 7-acre tract on Hoyt and Bedford Sts., STAMFORD, CONN.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
October 11, 14 New Jersey
STREETS AND ROADS
October 4 New Jersey October 5 Maryland

BIDS ASKED—BUILDINGS

Pa., McKees Rocks—NURSES HOME, etc.—BA 10/5—Ohio Valley General Hospital, Heckle Rd., 4 story, brick, block nurses home and training school, Heckle Rd. $700,000. Plans deposit $20. Press C. Dowler, Century Bldg., Pittsburgh, archt., CD 4/16/53.

SOON LETS CONTRACT—BUILDINGS

Pa., Pittsburgh—HOME FOR AGED—Sisters of The Holy Ghost, 5246 Clarwin Ave., soon lets contract 3 story, bsmnt., 145x246 ft. brick, block home for aged, Greentree. $500,000. A. Pyzdrowski, 3410 Melwood St., archts. CD 9/4/53.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **NEW YORK**—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany,

Brookfield Constr. Co., Inc., 521 5th Ave., New York, N. Y., LB $2,324,734, est. $3,022,000. 1.29 mi. Brooklyn-Queens Expressway, Contr. 7A, FABQE. 54-1. Kings Co.;

DeLillo Constr. Co., Inc., 216 W. Merrick Rd., Valley Stream, N. Y., LB $855,223, est. $963,000. 0.53 mi. Brooklyn-Queens Expressway, Cont. 6A, FABQE. 54-2, Kings Co.;

Gessler Contg. Co. Inc., Burnet Ave. and Clarke St., East Syracuse, N. Y., LB $250,667, est. $295,000. 0.73 mi. City of Norwich: North Broad St., FAC. 54-13, Chenango Co.;

The Grandview Constr. Corp., 740 S. Fulton Ave., Mount Vernon, N. Y., LB $154,137, est. $173,000. New York State Thruway-Mohawk Sect. Sub. d. 16. (Pattersonville Gas Station-Restaurant Site) (Type B). M. T. 54-4, Montgomery Co.;

Grow Constr. Co. Inc., 313 W. 53 St., New York 13, N. Y. LB $787,926, est. $881,000. 0.17 mi. City of Binghamton: Court St. Arterial Hy. (Erie & D. L. & W. R.R. Brs.). FGC 54-12, Broome Co.; LB $669,936, est. $688,000. 0.33 mi. Fort Plain-St. Johnsville (C.R. 65), FASS 54-14, Montgomery Co.;

W. F. Hendrich Co., Inc., Sidway Bldg., Buffalo 12, N. Y. LB $201,835, est. $205,000. 0.5 mi. Grand Island State Parkway (Access Rd. to Beaver Island State Park). GISP. 54-3, Erie Co.;

Holmes & Murphy, Inc., Bank St., Orchard Park, N. Y. LB $193,112, est. $206,000, 0.73 mi. Genesee Rd. C. R. 448, FASS. 54-15, Erie Co.;

The Lane Constr. Corp., 37 Colony St., Meriden, Conn. LB $5,800,504, est. $8,342,000. 10.63 mi. Bloomingburg-Monticello, Pt. 2 and Pt. 1, SH 5457-5510-5510A Port Jervis-Wurtsboro, Pt. 2, SH 8287. FARC. 54-101, Sullivan Co.;

Maloy, Dugan & Maloy, Inc., 58 Dott Ave., Albany 5, N. Y. LB $150,237, est. $169,000, New York State Thruway-Mohawk Sect. Subd. 2 (So. Schenectady Gas Station-Restaurant Site), (Type C.) M.T. 54-5, Albany Co.;

M. Parisi & Son, Inc., 54-66 48 St., Maspeth 78, N. Y. LB $158,270, est. $170,000, 4.37 mi. Grand Central Parkway Exten. Van Wyck Expressway, FAGCP. 54-1, FAVWE, 54-1, Queens Co.;

A. S. Wikstrom, Inc., Skaneateles, N. Y., LB $1,296,636. est. $1,297,000, 0.71 mi. Albany City; Riverfront Arterial Hy. (Cont. 1), Albany Co. Bids Sept. 16. CD 9/1, 8/26.

† **Walsh Constr. Co.**, 122 E. 42 St., New York 17, N. Y. CA $985,000 (Negotiated Contract) fabrication, erection superstructure and floating supports of temporary steel truss, floating bridge connecting Hawkins Point to Barnhart Island over St. Lawrence River, near Massena, St. Lawrence Co, Spec. 5425-A, St. Lawrence Contr. No. 2, NEW YORK. The Power Authority of State of New York, 270 Broadway, New York 7, N. Y. Bids Sept. 13 rejected. LB $1,167,080. CD 9/16 under LB.

▲ **Roberts & Schaefer Co.**, 130 N. Wells St., Chicago, Ill., CA $1,001,279, Schedule II, base bid and additive 56 for sanitary sewage disposal sys., WEST POINT, N. Y. U. S. Eng., 80 Lafayette St., New York 13, N. Y. Bids Sept. 1. CD 9/7, under LB.

▲ **PENNSYLVANIA**—State Hy. Dpt., 506 N. Office Bldg., Harrisburg,

Indyk Constr. Co., 539 Vermont St., McKeesport, Pa. LB $399,659. crushed aggregate base with bit. surf. variable in width, 7,805 ft. T. R. 151, South Heights Boro, Hopewell Twp., Beaver Co.;

James J. Skelly, Inc., Media, Pa., LB $994,252, 6,517 ft. divided hy. of rein.-con. 24 ft. wide each side of earth divisor, Rte. 180, Chester Twp., City of Chester, Delaware Co.;

Collins & Maxwell, Inc., Easton, Pa., LB $66,202. 2,440 ft. hy. of crushed aggregate base with bit. surf. 22 ft. wide, L. R. 166 (19), Bangor Boro, Northampton Co.;

Putnam & Greene, Inc., Box 2012, Station A, Fort Wayne 3, Ind., LB $702,003, 16,170 ft. crushed aggregate base with bit. surf. variable in width, one I-beam bridge, T.R. 11, Point and Mahoning Twps., Danville Boro, Northumberland and Montour Counties. Bids Sept. 17. CD 8/30.

DELAWARE—State Hy. Dpt., Dover,

James Julian, Inc., Elsmere, Del., LB, $725,099 embankment and stabilization, South approach Walnut Street Bridge, Wilmington, Contract 1224 (5), Fed. Aid Proj. F-1 (9), New Castle Co. Bids Sept. 15. CD 8/26.

BUILDINGS

LOW BIDS AND CONTRACTS

Cedar Ridge Homes, c/o Stanley Klein, archt., 89-31, 161 St., Jamaica, N. Y. Owner Builds. $750,000. 54 HOUSES, Central Park Rd., south of Old Country Rd., BETHPAGE, N. Y.

▲ **Lefrak Organization**, 97-27 64 Rd., Forest Hills, N. Y. Owner Builds. $2,000,000. 6 story APARTMENT, Ocean Ave. between Avenue J. and Avenue K, BROOKLYN, N. Y.

▲ **Murray Manor Homes**, c/o Tryon Realty Co., 98-89 Queens Blvd., Forest Hills, N. Y. Owner Builds. $2,000,000. 122 HOUSES, 35-acre tract, Jerusalem Ave., south of Old Country Rd., HICKSVILLE, N. Y.

▲ **Investors Funding Corp.**, 511 Fifth Ave., New York 17, N. Y. Owner Builds. $4,000,000. APARTMENT and SHOPPING CENTER, 45-acre tract, Pinewood Rd. and Fieldstone Dr., HARTSDALE, N. Y. Tito DiVincenzo, 135 E. 65 St., New York 21, N. Y., archt.

▲ **Miller Homes**, c/o Tryon Realty Co., 98-89 Queens Blvd., Forest Hills, N. Y. Owner Builds. $7,500,000. 500 HOUSES on tract on Jackson Ave., SYOSSET HILLS, N. Y.

† **Glenwal Co., Inc.**, P. O. Box 206, Rochelle Park, N. J., CA $746,800, Smokeless Powder PLANT, Picatinny Arsenal, DOVER, N. J. U. S. Eng., 80 Lafayette St., New York 13, N. Y. Bids Aug. 26. CD 9/8, under LB.

▲ **Mellon Stuart Co.**, 210 E. Parkway, Pittsburgh, Pa. CA Approx. $1,000,000. 1 story, 810,000 sq. ft. steel, brick, block STEEL SPECIALTIES BLDG., ELLWOOD CITY, PA. The Townsend Co., New Brighton, Pa., Bids Sept. 13. CD 9/9.

▲ **Lang Constr. Co. & Dade Constr. Co. of Maryland**, Sheriff Road, Upper Marlboro, Md. CA Est. $4,000,000. Sect. 2, 450-unit semi and triple detached HOMES and SHOPPING CENTER, Parlmer Park, UPPER MARLBORO, MD. Frank Development Corp., 1523 L St. N.W., Wash., D. C. CD 3/10.

SOUTH

BIDS ASKED—BUILDINGS

Va., Charlottesville — HIGH SCHOOL — BA 10/5 — City, School Bd., City Hall, Lane High School addn. $950,000. CD 8/25/53.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **T. A. Loving & Co.**, Bank of Wayne Bldg., Goldsboro, N. C. CA, $900,935, A, B and Alts. C, airmen's dormitories, service club and related facilities, ENG-31-075-55-2, Pope Air Force Base, FORT BRAGG, N. C. U. S. Eng., 308 Customhouse, Wilmington, N. C. Bids Aug. 26. CD 7/14.

▲ **FLORIDA**—State Road Dpt., Tallahassee,

Cone Bros. Constr. Co., Box 1301, Tampa, Fla., LB, $114,730, 0.344 mi. railroad overpass, etc. State Road S-585-A, Job 1071-150, Hillsborough Co.;

Central Constr. Co., 948 Union Trust Bldg., Pittsburgh, 19, Pa., LB, $646,887, sand-blasting and painting exposed structural steel and steel handrail State Road No. 5, Seven-Mile Bridge on Overseas Hy. Job 9003-902, Monroe Co.;

Powell Brothers, Inc., Fort Lauderdale, Fla., LB, $108,766 Vaca Bridge and approaches, State Rd. 5, Job 9004-150, Monroe Co. CD 9/10;

Cleary Bros. Constr. Co., Box 6815, West Palm Beach, Fla., LB, $551,350. bridge and approaches over Caloosahachee Canal at Moore Haven, F-0192(4), State Road 25, Job 0501-202, Glades Co. Bids Sept. 21. CD 8/23.

▲† **Dravo Corp.**, Neville Island, Pittsburgh 25, Pa. LB, $1,179,500. riverbank excav., constr. cofferdam nearly ½ mi. long, Greenup Locks and Dam on Ohio River between Ashland, Ky. and Portsmouth, O., KENTUCKY. U. S. Eng., 237 Fourth Ave., Huntington 18, W. Va. Bids Sept. 16. CD 9/1.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Eugene Simpson & Bros.**, 300 Montgomery St., Alexandria, Va., CA, $1,646,747. Groveton HIGH SCHOOL, Groveton, FAIRFAX, VA. Fairfax Co. School Bd., Fairfax, Va. Bids Sept. 16. CD 9/20, under LB.

MIDDLE WEST

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
October 13 Michigan

BIDS ASKED—BUILDINGS

▲ **Ill., Evergreen Park**—COLLEGE, etc.—BA 9/28—St. Xavier College and Academy, 4928 S. Cottage Grove, Chicago, St. Xavier's College and Academy. $5,000,000. Naess & Murphy, 80 E. Jackson Blvd., Chicago, Zone 4, archts. CD 7/22.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **OHIO**—State Hy. Dpt., Columbus,

The Murray Constr. Co., P.O. Box 231, Waverly, O. LB $255,456, est. $282,700, Type T-35 on B-119 and structure 1.354 mi. SR 74-16.26, S-69 (2), Adams Co.;

The Baker & Hickey Co., P.O. Box 5008 Tri-Village Station, Columbus, O., LB $1,387,338, est. $1,494,700, Type T-71 and structures 2.738 mi. SR 120-3.79, UI-1052 (11), City of Toledo, Lucas Co.;

Edgar Spring, Inc., New Philadelphia, O., LB $183,938, est. $194,200, Type T-35 and structure, 3.503 mi. USR 30, 28.41, Columbiana Co.;

Arthur S. Langenderfer, Inc., 4690 W. Bancroft St., Toledo, O., LB $396,353, est. $433,700, Type T-35 7.002 mi. USR 127, (2.26-9.27), Village of Sherwood, Defiance Co.;

Clyde L. Moore & Clyde L. Moore, Inc., R.F.D. No. 1, Lowellville, O., LB $123,095, est. $151,300, Type T-35 on B-119 and structure 0.399 mi. USR 322, 19.22, Geauga Co.;

The Fuller-Davies Co., 1111 W. Court St., Cincinnati, O. LB $93,576, est. $86,800, Type T-35, 1.689 mi. SR 0, (10.81-11.55), Village of Arlington Heights, Cities of Cincinnati and Lockland, Hamilton Co.;

Oyler Bros., Inc., 1324 Second St. S. W., Canton, O. LB $61,154, est. $56,800, Type T-35, 1.614 mi. SR 241, (8.83-10.42), City of Massillon, Stark Co.;

Charles S. Ratzlaff Constr. Co., N. Market St., McArthur, O., LB $97,587, est. $121,900, Type T-35 on B-119 and structure 0.634 mi. SR 75, 13.27, Vinton Co. Bids Sept. 14. CD 8/20.

▲ **INDIANA**—Indiana Toll Road Comm., 309 W. Washington St., Old Trails Bldg., Indianapolis,

Union Building & Constr. Co., 631 Main Ave., Passaic, N. J., LB $6,019,594. Contracts 48, 49 and 50, 13.1 mi. paving, LaGrange and Steuben Counties. Bids Sept. 22. CD 8/31.

▲ **ILLINOIS**—State Div. Hys., Springfield, rejected bids Sept. 10 c.conc. 0.51 mi. F.A. 131 (Congress St. Expressway) Cook Co., LB $1,150,759. CD 9/15, under LB.

▲ **Price Bros. Co.**, 1932 E. Monument St., Dayton, O., CA, $1,366,136 (A) pipe line material;

Torson Constr. Co., 1890 Woodswether Rd., Kansas City, Mo., CA, $339,271 (B) installation of line;

Caldwell Eng. Co., Jacksonville, Ill., CA, $165,500 (E) pumping station pumping and electrical equip, piping and controls for 23 mi. raw water transmission line 24 and 30 in. diam., JACKSONVILLE, ILL. City, City Hall, Jacksonville, Ill. Grand total $1,870,907. Bids Sept. 2, awarded Sept. 13. CD 8/19.

BUILDINGS

LOW BIDS AND CONTRACTS

R. S. Ursprung Co., Hanna Bldg. Annex, Cleveland 15, O. CA $815,550, Berea HIGH SCHOOL addn., GYMNASIUM and swimming pool, BEREA, O. Berea School Dist., 390 Fair St., Berea, O. Awarded Sept. 13. CD 11/6.

▲ **Hunkin-Conkey Constr. Co.**, 1740 E. 12 St., Cleveland 14, O., CA Approx. $2,000,000. 1 story, masonry 117,500 sq. ft. lamp RESEARCH LABORATORY, Nela Park, EAST CLEVELAND, O. General Electric Co., Nela Park, East Cleveland, O. McGeorge-Hargett & Assocs., 7016 Euclid Ave., Cleveland 3, O. engrs.

Campbell Constr. Co., Warren, O., CA $750,000 incl. equipt., STORAGE WAREHOUSE, 125x758 ft. at north, 150x758 ft. at south, brick constr., along Brighton Ave., WARREN, O. Mullins Mfg. Corp., Warren, O. CD 10/9/52.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS
STREETS AND ROADS
October 7 Kansas

† **Tex., Big Spring**—HANGAR—BA 10/12—U. S. Eng., Box 1538, Albuquerque, N. M., hangar-maintenance with shops. Inv. No. ENG-29-005-55-26. $450,000-$1,000,000. Haynes & Kirby and Hasie & Green, Lubbock, engrs.-archts. CD 9/7.

† **Okla., Altus**—PAVING—BA 10/14—U. S. Eng., Box 61, Tulsa, Zone 2, addnl. airfield paving, runway and taxiway widening, constr. taxiways, blast area, aprons, etc., Altus Air Force Base, Inv. No. ENG-34-066-55-16. $450,000-$1,250,000.

▲† **Tex., Wichita Falls**—TRAINING CELLS, etc.—BA 10/14—U. S. Eng., Box 61, Tulsa 2, Okla., (A) 7 parts of jet engine training cells, $750,000-$1,750,000 (B) 5 pairs reciprocating engine training cells, $500,000-$1,250,000 (C) 20,300 sq. ft. training bldg., rein.-con. walls and slab on grade, drilled and underreamed rein.-con. piers and grade beams and poured lightweight concrete slab on steel joists, $275,000 (D) steam plant, fuel and steam distr. sys., exterior utilities, etc. $150,000-$475,000, Shepherd Air Force Base, Inv. No. ENG-34-066-55-13. CD 9/15.

▲† **Tex., Kelly Air Force Base** — ADMIN. HOUSING FACILITIES—BA About 10/26—U. S. Eng., P.O. Box 1229, Galveston, four 3 story, 39x266 ft. concrete frame dormitories; two 2 story (1 approx. 48x215 ft.) (1 approx. 41x245 ft.), concrete frame officers quarters; one 1 story approx 126x154 ft. concrete frame, mess hall; one 1 story, 39x170 ft. concrete frame admin. bldg., Inv. No. ENG-41-243-55-24. $3,000,000-$5,000,000. CD 9/3.

BIDS ASKED—BUILDINGS

▲ **Kan., Lawrence**—DORMITORY—BA 10/13—State, Dpt. Admin., Topeka, women's dormitory at University of Kansas, $1,140,000, John Brown, State House, Topeka, state archt. CD 7/27/53.

▲ **Kan., Kansas City**—SCHOOL—BA 10/19—Bd. Educ., Library Bldg., Argentine High School, $1,400,000, J. W. Radotinsky, 1401 Fairfax Trafficway, Kansas City, Kan., archt. CD 11/10.

Minn., Wayzata—SCHOOL—BA 10/20—Bd. Educ., Mrs. D. F. Gee, clk., high school addn., grade school addn., $800,000. Plans deposit $25 each. Bissell & Belair, 1111 Nicollet Ave., Minneapolis, archts. CD 3/8.

Okla., Oklahoma City—HIGH SCHOOL—BA 10/21—Bd. Educ., 400 N. Walnut St., Capitol High School, Auditorium and Field House. $750,000. Plans deposit $100. Hudgins, Thompson & Ball, 1100 W. Main St., archts. CD 5/14.

▲ **Tex., Silsbee**—PLANT—Bids Asked—American Republics Corp. & Houston Oil Corp. of Texas, Petroleum Bldg., Houston, recycling plant, $1,250,000; some fuel crude oil lines, $75,000; loading and unloading facilities for recycling plant products, $75,000; storage for recycling plant production, $100,000. CD 9/14.

SOON LETS CONTRACT—BUILDINGS

Tex., Houston—GARAGE—City National Bank, 821 Main St., soon lets contract, 7 story bsmnt., 80,000 sq. ft., rein.-con. frame penthouse, garage addn., granite, stone on tile back-up, etc., brick, incl. 1 story drive-in self depository. $750,000. Alfred C. Finn, Bankers Mortgage Bldg., archt. Reg. F. Taylor & Robert J. Cummins, Bankers Mortgage Bldg., engrs. CD 9/17.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **Peter Kiewit Sons' Co.**, Southeast Station, Wichita, Kan. CA $556,141. aprons exten., Smoky Hill Air Force Base, SALINA, KAN. U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. Bids Aug. 18. CD 8/11.

▲ **G. G. Griffis Constr. Co.**, 4450 E. Admiral Pl., Tulsa, Okla., CA Approx. $1,250,000. 64 mi. 12 in. oil pipe line from Tonkawa to Oklahoma City, OKLAHOMA, Continental Pipe Line Co. (subsidiary Continental Oil Co.), Sterling Bldg., Houston, Tex. Awarded Sept. 17. CD 11/6/52.

P. C. Sorenson, 2203 S. Industrial St., Dallas, Tex. CA $744,648, laying 18,840 lin. ft. 48 in. rein.-con. water pipe, steel cylinder type, DALLAS, TEX. City, City Hall, Main and Harwood Sts., Dallas, Tex. Bids Sept. 14. CD 8/31.

▲† **Farnsworth & Chambers Co., Inc.**, Box 74, Houston, Tex., LB $6,498,068, est. $4,500,000. 500-1000-bed Hospital, Inv. No. ENG-41-243-55-1, LACKLAND AIR FORCE BASE, TEX. U. S. Eng., Box 1229, Galveston, Tex. Bids Sept. 16. CD 5/25.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **W. M. C., Inc.**, Winona, Minn. CA general contract;
P. J. Gallagher & Sons Co., Faribault, Minn. CA plumbing and heating contract;
W. Schupp & Co., 714 S. Eighth St., Minneapolis, Minn. CA ventilating contract;
R. G. Brown Electric Co., Waseca, Minn. CA electrical work;
Minneapolis-Honeywell Regulator Co., 621 E. Hennepin Ave., Minneapolis, Minn. CA temperature control for LIBRARY, NORTHFIELD, MINN. Total est. $1,300,000. Carleton College, L. M. Gould, pres., Northfield, Minn. Bids Sept. 8. CD 8/24.

▲ **American Agriculture Chemical Co.**, 50 Church St., New York 7, N. Y., Separate Contracts, $1,750,000. commercial fertilizer PLANT with 60,000 ton yearly capacity on 50-acre site, near HUMBOLDT, IA.

▲ **Hickman Mills Plaza, Inc.**, c/o Sharp Bros. Contg. Co., 1014 E. 19 St., Kansas City, Mo. Owner Builds. $2,500,000. SHOPPING CENTER, KANSAS CITY, MO. Geo. McIntyre & Son, 1004 Baltimore St., Kansas City, Mo., archt.

▲ **M. W. Kellogg Co.**, foot of Danfourth St., Jersey City 3, N. J., CA, fluid catalytic CRACKING UNIT at refinery;
Southwestern Eng. Co., 4800 South Santa Fe St., Vernon, Calif., CA, 5,000-bbl. per day platformer, ENID, OKLA. Total est. $4,000,000. The Chicago Corp., Continental Life Bldg., Fort Worth, Tex.

A. P. Kasch & Sons, Box 1472, Big Springs, Tex., CA $819,015. COURT HOUSE and JAIL, BRYAN, TEX. Brazos Co., Bryan, Tex. Bids Sept. 9. CD 9/15 under LB.

▲† **T. C. Bateson Constr. Co.**, P. O. 7305, Love Field Station, Dallas, Tex., LB $1,148,127, ORDNANCE REPAIR SHOP Inv. No. Eng-41-443-55-13, FORT HOOD, TEX. U. S. Eng., 100 W. Vickery St., Fort Worth, Tex. Bids Sept. 21. CD 8/31.

▲ **Paul E. Canto**, 4105 Woodfox St., Houston, Tex. Owner Builds. $333,335, Job. 1, 28 DWELLINGS; $348,190, Job. 2, 34 DWELLINGS; $341,185, Job. 3, 31 DWELLINGS, HOUSTON, TEX. Grand total $1,022,710. CD 9/9.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS
STREETS AND ROADS
October 20 California

BIDS ASKED—BUILDINGS

Wash., Nooksack—SCHOOL—BA 10/7—School District No. 506, Nooksack, 41,000 sq. ft., frame high school, $425,000. Plans deposit $25 for general; $15 for each mechanical and electrical. Jones & Bindon, Hoge Bldg., Seattle, Zone 4, archts. CD 3/17.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **Coleman Eng. Co.**, 11421 Knights Bridge St., Los Angeles, Calif., CA $2,000,000. design and constr. rocket sled;
Joseph N. Smith, Cedar City, Utah, **Laliff Wood & John E. Northrop**, Hurricane, Utah, CA $126,456, road to rocket sled at Virgin, Washington Co., UTAH. Dpt. Air Force, The Pentagon, Wash. 25, D. C. CD 7/12.

M. B. McCullough Co., 503 13th Ave., Salt Lake City, Utah, CA $632,444. overhaul bldg., HILL AIR FORCE BASE, UTAH. Director Procurement & Production, OPPSS, Hill Air Force Base, Utah. Bids Sept. 2. CD 9/15, under LB.

▲ **Donald M. Drake Co. & George A. Fuller**, 1600 Northwest Savier St., Portland, Ore., CA, $5,514,000. 2 story, steel frame shop and office, service bldg., fire station, boiler plant, utilities, well, grading, paving, etc. for $10,000,000 flight center, MOSES LAKE, WASH. Boeing Airplane Co., 7755 E. Marginal Way, Seattle, Wash. Bids Aug. 31. CD 9/3, under LB.

▲ **Ukropina, Polich & Kral and John A. Ukropina**, 201 E. Las Tunas St., San Gabriel, Calif., CA, $4,269,463 Schedules 72P and 73S.C, pipe line between Corona and San Juan Tunnel from Lower Feeder;
ABC Constr. Co., 12420 S. Bloomfield St., Norwalk, Calif., CA, $1,498,951, Sch. 74P, pipe line between Corona and San Juan Tunnel for Lower Feeder, Corona, Riverside and San Bernardino Counties, LOS ANGELES, CALIF. Metropolitan Water Dist. of Southern California, 306 W. 3 St., Los Angeles, Calif. Bids Sept. 9, awarded Sept. 14. CD 9/13, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Brady Constr. Co.**, Bellingham, Wash., Day Labor. $1,000,000. 107 HOUSES in South Bellingham area between Cowgill Ave. and Briar Rd., known as Edgemoor Manor, BELLINGHAM, WASH.

▲ **City**, City-County Bldg., Seattle 4, Wash., rejected bids Sept. 1, GENERATOR for Ross Powerhouse, SEATTLE, WASH. LB, $1,238,245. Will re-advertise. CD 9/17, under LB.

▲ **C. E. Youngdahl & Co., Inc.**, Box 5183, Portland, Ore. CA, $1,478,000. 10 rein.-con., steel frame buildings for HIGH SCHOOL, VANCOUVER, WASH., School District 37, Shumway Junior High School, Vancouver, Wash. Bids Aug. 24. CD 8/30, under LB.

▲ **A. Palumbro**, 4205 S. E. Woodward St., Portland, Ore. Own Forces. $1,040,000. 130-unit APARTMENT, PORTLAND, ORE. James Gardiner, 1028 N. E. Canyon Rd., Beaverton, Ore., archt. Awarded Sept. 20.

▲† **Diesko & Post**, Salem, Ore., and **Hoffman Constr. Co.**, 715 S.W. Columbia St., Portland, Ore., CA Total est. $8,000,000. DEPARTMENT STORE, SALEM, ORE. Meier & Frank Co., 621 S.W. 5th St., Portland, Ore. Bids Sept. 14, awarded Sept. 17. CD 9/9.

Macco Corp. & Dalke Brothers, 4101 Pierce Rd., Bakersfield, Calif., CA, $825,930, 55,000 sq. ft. Washington Junior High SCHOOL, BAKERSFIELD, CALIF. Bakersfield City School District, 1600 "K" St., Bakersfield, Calif. Bids Sept. 10.

Milton Kauffman Constr. Corp., 2918 W. Compton St., Gardena, Calif., Owner Builds, $686,120, 85 frame, stucco DWELLINGS in Tract 19102 and 19103, TORRANCE, CALIF.

CANADA

BIDS ASKED—BUILDINGS

▲ **Alta., Edmonton**—CITY HALL—BA 10/18—City, Municipal Bldg., city hall south of C.N.R. Station. $2,750,000. Dewar, Stephenson & Stanley, Northern Hardware Bldg., archts. CD 12/1.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **Mannix Ltd.**, 332 7 Ave. W., Calgary, Alta., CA Total est. $3,000,000. general contract, hydro-electric power project on Kananskis River, Kananskis, ALBERTA. Calgary Power Co., Ltd., Calgary, Alta. (Correction - contractor's address). CD 9/1.

▲ **Emil Anderson Constr. Co.**, Hope, B. C., CA, $1,255,567, railway constr., North Vancouver to Squamish Mile 33.5 to 41.0 BRITISH COLUMBIA, Pacific Great Eastern Ry. Co., W. A. C. Bennett, pres., 736 Granville St., Vancouver, B. C., and B. E. Valde, acting ch. engr., Squamish, B. C. CD /12.

Claydon Co., Ltd., 290 Garry St., Winnipeg, Man., CA, $767,653 drill and recreation hall at R.C.A.F. Station, WINNIPEG, MAN. Defence Constr. (1951) Ltd., 56 Lyon St., Ottawa, Ont. Bids Aug. 12, awarded Sept. 15. CD 7/21.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Bird Constr. Co. Ltd.**, 1427 19 Ave., Calgary, Alta. CA, $1,826,000, NURSES RESIDENCE and SCHOOL of NURSING, CALGARY, ALTA. General Hospital Bd., Calgary, Alta. CD 9/16, under LB.

▲ **Great West Development Co. Ltd.**, 350 Strathmillan Rd., Winnipeg, Man. Owner Builds, $7,000,000 SHOPPING CENTER and DWELLINGS, St. James, WINNIPEG, MAN. CD 11/17/52.

▲ **Hamilton Constr. Co. Ltd.**, 1068 E. Barton St., Hamilton, Ont., Owner Builds, $1,500,000. 150 DWELLINGS, in Burkholder Park Area, HAMILTON, ONT.

▲ **Redys Realty Co. Ltd.**, Mohawk, P.O., Hamilton, Ont., Owner Builds, $1,440,000, 48-six suite, 2 story, concrete block, brick APARTMENT BLDGS., East 42nd St., HAMILTON, ONT.

▲ **Tecon Constr. Ltd.**, P. O. Box 309, Kingston, Ont., CA $5,000,000. 450 concrete, brick COTTAGES, Redden Hall Area, KINGSTON, ONT. Abdo Constr. Co., Ltd., 1348 N. Christian St., Sarnia, Ont. Regner Blok Anderson, c/o owner, engr. CD 6/30, under CA.

▲ **S. D. Miller & Sons**, 6999 Cote des Neiges Rd., Montreal, Que. CA, $2,500,000, SHOPPING CENTER, incl. 26 stores, OTTAWA, ONT. Westgate Shopping Centre, Carling Ave. and Merivale Rd., Ottawa, Ont. Eliasoph & Berkowitz, 6931 Cote des Neiges Rd., Montreal, Que., archts.

Almanzch Gardens Ltd., 124 Dorval Rd., Dorval, Que., Owner Builds, $757,988, forty-three 1 story, bsmnt., concrete, brick, DWELLING UNITS, DORVAL, QUE.

C. Jobin Ltd., St. Malo Industrial Centre, Quebec City, Que., CA, $750,000, 5 story, 40x280 ft., concrete, brick, stone HOSPITAL, 18 St., QUEBEC CITY, QUE. Hospital of the Infant Jesus, 1401 18 St., Quebec City, Que. Raoui Chenvert, 170 Pie St., Quebec City, Que., archt.

W. Bourget, St. Laurent, Que., Owner Builds, $540,000. 54 BUNGALOWS, Champigny and Lepine Sts., ST. LAURENT, QUE.

ALASKA

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **ALASKA**—Alaska Road Comm., Dpt. Interior, Federal Bldg., Juneau,
Lytle, Green & Birch, Securities Bldg., Seattle 1, Wash. CA, $1,699,134, est. $2,197,659, reconstr., crushed rock surf. 42.5 mi. Alaska Hy. Sect. C-2, Mile 1265 to Canadian Border. Bids Aug. 31. CD 9/3, under LB.

LATIN AMERICA

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **Morrison-Knudsen Co.**, P. O. Box 450, Boise, Idaho, CA $1,800,000. completing tunnel for Chotano-Chancy Irrigation Proj. in Depts. of Lambayeque and Cajamatca, PERU. Govt. of Peru, Lima, Peru. CD 7/2/47.

AMERICANS ABROAD

BIDS ASKED—HEAVY CONSTRUCTION

Bids are being taken on the following project, under recently announced International competitive bidding of NATO

DENMARK

POL Bygningsdistrikt, N30 Frederikelholms Kanal, Copenhagen, Denmark.
supply of following quantities and sizes of pipe for the Danish POL (Petroleum and other lubricants) program: 49.6 KM. of 6 in. single-wrapped pipe, 11.6 KM. 14-in. single wrapped pipe 8.9 KM. 16 in. single wrapped pipe and 10.5 KM 16 in. double wrapped pipe. Est. $560,000. Firms interested in bidding should report their interest before October 9. For information on bidding NATO projects see 6/25 Construction Daily.

(Proposal Advertisements see pp. 56 to 59)

West Point sewer system, Schedule II

Roberts & Schaefer Co. of Chicago, Ill., will construct two sewage treatment plants at the U. S. Military Academy, West Point, N. Y. for $1,001,279 Their bid is lowest of eight received on Schedule II and 18% under second bid. This contract, plus $170,000 awarded from Schedule I for intercepting sewers, East Academic Building sewer and Cullem Road storm drain (see ENR September 23, 1954, p. 68) brings to $1,171,000 the awards for additions to West Point's sewer system.

Each of the two plants accommodates 4,500 people and has a capacity of 790,000 gallons per day.

In contrast to Schedule I where all bids are above the engineer's estimate, on Schedule II the successful contractor dips 12% below. U. S. Corps of Engineers at New York are in charge of the project; Alexander Potter, New York, is consulting engineer.

Lump sum items show considerable variation and account for most of the $219,000 difference between the low bidders. The Roberts & Schaefer Co. bid is $23,000 and 60% lower than second on sewage and drainage work for the Riding Hall plant, $34,000 and 74% lower on the same item for the target field plant. Low bidder is another $34,000 and 34% lower than second on the pump station and plant service building substructure.

Biggest percentage difference between the two occurs on construction wood sheeting ordered left in place, with second bidder Baylor Construction Corp. of New York estimating $50 per Mfbm against low bidder's $350—an 86% spread.

Completion date is set at 360 calendar days after notice to proceed.

Bidders include:

Schedule II—sewage treatment plants plus flow regulator

1C	Roberts & Schaefer Co., Chicago, Ill	$1,001,279
2	Baylor Constr. Corp., New York, N. Y.	1,220,238
8	Peter Mitchell Inc., Greenwich, Conn	1,591,790
EE	U. S. Corps of Engineers, New York 13, N. Y.	1,134,542

Riding Hall sewage treatment plant

Bids: 8-26-54 Item	Unit	Quantity	Unit Prices 1C	2
Exc, addnl common	cy	100	$7.00	$2.00
rock	cy	150	25.00	20.00
Grading, uncl	ls	1	4,125	14,000
Borrow	cy	100	2.50	1.50
Constr wood sheetng, lip	Mfbm	10	350.00	50.00
Broken stone fndn	cy	80	5.22	5.00
Track crossings	ls	1	16,242	28,000
Conc, addnl "AA"	cy	20	60.00	50.00
"C"	cy	10	20.00	40.00
Reinf stl, addnl	lb	2,000	0.15	0.15
Restore macadam pvmt	lf	260	4.50	5.00
curbs	lf	10	4.00	4.00
Topsoiled & seeded areas	sy	4,800	0.75	1.00
CI force main 10"	lf	820	$10.00	$15.00
water mn, in pl, 6"	lf	610	3.60	10.00
Conn to exist water mn	ea	1	125.00	500.00
CI hydrant assembly 6"	ea	2	200.00	300.00
Gate vlv & vlv box 6"	ea	3	80.00	200.00
Sewers & drainage work	ls	1	15,215	38,511
Pile, f&p 10BP42 stl	lf	2,500	8.80	6.00
14" pipe	lf	909	41.60	30.00
abandoned pipe	lf	100	25.00	20.00
Sludge dry bed & hsing, incl handling equip	ls	1	44,052	64,000
Substruct-sew eject sta	ls	1	18,431	12,000
digest & control house	ls	1	25,415	40,000
Set tnk, incl infl channl grit chmbrs, Parshall F, scrn grind sta, drain chmbrs	ls	1	52,788	72,000
Substruct-plant serv bldg	ls	1	5,932	8,000
Superstruct:				
sew eject sta	ls	1	3,645	4,000
digest & control house	ls	1	12,504	16,000
chlor & stor bldg	ls	1	8,282	7,500
plant serv bldg	ls	1	18,213	20,000
Misc metal & material	ls	1	21,600	20,000
pipe, fitting & vlv	ls	1	30,341	40,000
Grit chamber mechanism	ls	1	9,163	8,000
Sewage meter	ls	1	1,160	2,000
Screen comminutors	ls	1	4,721	6,000
Sludge collect & skim equip	ls	1	6,905	9,000
Chlor equip & acces	ls	1	4,984	6,000
Sig diges tnk cov & acces	ls	1	16,806	20,000
heater & heat exchng	ls	1	4,726	6,000
dried, grinder	ls	1	1,000	1,000
Pump equip & motor	ls	1	5,510	7,000
Disconn water supply sys	ls	1	4,628	2,000
F&p sew eject equip	ls	1	12,809	13,000
Electrical work	ls	1	33,816	32,000
Heat & vent work	ls	1	14,400	12,000
Plant outlet sewer	ls	1	30,073	18,000
Paved areas	sy	2,230	3.25	2.50
Conc walks	sf	1,900	0.75	2.50
curbs	lf	730	2.50	2.00
gutter	lf	250	4.60	3.00
Fencing & gates	ls	1	2,323	2,000
Riprap-slope protection	ls	1	1,200	1,500
Constr sew flow reg	ls	1	3,200	3,000

Target field sewage treatment plant

Item	Unit	Quantity	1C	2
Exc, addnl common	cy	100	7.00	2.00
rock	cy	250	25.00	20.00
Grading, uncl	ls	1	5,700	4,000
Borrow	cy	100	2.00	1.50
Constr wood sheetng, lip	Mfbm	10	350.00	50.00
Broken stone fndn	cy	80	5.00	5.00
Track crossing	ls	1	7,064	2,000
Conc, addnl "AA"	cy	20	60.00	50.00
"C"	cy	10	20.00	40.00
Reinf stl, addnl	lb	2,000	0.15	0.15
Restore macadam pvmt	lf	760	4.50	5.00
curbs	lf	10	4.00	4.00
sodded areas	lf	760	0.70	2.00
seeded areas	sy	100	0.60	1.00
Topsoiled & seeded areas	sy	3,460	0.75	1.00
CI water mn, in pl, 6"	lf	2,000	5.00	8.00
Conn to exist water mn	ea	1	125.00	500.00
CI hydrant assembly 6"	ea	1	201.00	300.00
Gate vlv & box, 6"	ea	3	80.00	300.00
Sew & drain work	ls	1	12,104	46,000
Sludge dry bed & hsing incl handle equip, compl	ls	1	45,045	64,000
Substruct:				
digest & control house	ls	1	29,120	40,000
pump sta & plant serv bldg	ls	1	66,408	100,000
Set tnk, w infl & offl MH, sig sump, scum MH & chlor contact chmbr	ls	1	31,591	52,000
Superstruct:				
digest & control house	ls	1	12,504	16,000
pump sta & plant serv bldg	ls	1	27,082	30,000
chlor & stor bldg	ls	1	7,944	7,500
Misc metals & material	ls	1	21,000	30,000
pipe, fitting, vlv	ls	1	31,388	39,000
Grit chmbr mech	ls	1	9,740	8,000
can hoist & acces	ls	1	1,600	1,000
Sewage meter	ls	1	1,879	2,000
Screen comminutors	ls	1	9,661	8,000
Sig coll & skim equip	ls	1	6,805	9,000
Chlor equip & acces	ls	1	4,984	6,000
Sig diges tnk cov & acces	ls	1	16,806	20,000
heater & heat exchng	ls	1	4,726	6,000
dried, grinder	ls	1	1,000	1,000
Pump equip & motors	ls	1	11,549	13,000
Disconn water supply sys	ls	1	4,628	2,000
Electrical work	ls	1	41,200	35,000
Heat & vent work	ls	1	13,323	11,000
Paved areas	sy	1,080	3.60	2.50
Conc walks	sf	1,100	0.75	2.50
curbs	lf	700	2.50	2.00
gutter	lf	270	4.60	3.00
Fencing & gates	ls	1	4,300	4,000

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A case of congestion: bonds pour in too fast for comfort

But it won't make much long-run difference to construction, for long-term trends favor high volume of activity

The bond market, where businessmen and local government agencies borrow their money for construction, is worth looking at this week. It is suffering from a case of congestion—too many bonds offered to investors in too short a time. The situation will blow over soon, but it easily could cause temporary postponements by toll road authorities, eager to raise money and start construction.

In the long run, this will make very little difference to construction men. The big turnpike jobs are coming, and U. S. investors have the money and the inclination to finance them.

Here's what has happened lately: In the first place, investors were offered $136 million of federally guaranteed housing bonds—an issue giving buyers a tax-exempt yield of about 2.30%.

Then blue-chip American Telephone & Telegraph Co. came to market with $250 million of debentures, which investors snapped up at a taxable yield of 2.12%. That was a little better than they could have done a few weeks ago.

Right on top of that came $160 million of Kansas Turnpike bonds, which investors have bought steadily at a tax-exempt yield of about 3.40%.

• **Reception sours**—Although the federal housing bonds got a good reception at first, sales by underwriters to investors dropped off. Last week, underwriters were advertising $45 million of these bonds for sale. The AT&T bonds were not only quickly sold out, but were soon selling at a premium above the offering price. The Kansas Turnpikes were sold out, but were sluggish about rising above the issue price.

This story proves a moral: There is plenty of money around for tax-exempt securities that are "priced right", that is, securities which offer a liberal yield. The turnpike bonds offer a liberal yield. They must, in order to attract big investors like life insurance companies, pension funds, and savings banks, who don't get much good out of the tax-exempt feature because they are more or less exempt from federal income tax.

• **Not finicky**—So toll road authorities expect to pay liberal yields. And the history of past turnpike financings indicates that they are not going to worry about a few points more or less of interest cost when they bring their issues to market.

However, toll road officials who have good financial advice will try to avoid periods of congestion like the present one. For example, they will avoid offering their huge issues in the same week in which other big borrowings are scheduled. That could mean delays of a month or so in some previous tentative plans for financing, as turnpike people watch the market for a likely opportunity.

• **Bright future**—This should not be any cause for uneasiness in the construction industry. Long-range trends are working to keep money easy. The Federal Reserve Board, with its tremendous power to ease or tighten money rates, is making a policy of encouraging business and municipal borrowing. And when the Treasury borrowed $4 billion last week, it was careful to sell short-term notes in order to stay out of the way of private and municipal borrowing. Investors in short-term paper, mainly commercial banks, are usually not in the market for long-term issues like turnpikes.

Otis Elevator moves into heavy equipment fields

Otis Elevator Co. of New York—manufacturer of elevators and escalators—is making a move to diversify by getting into the materials handling and construction equipment fields. Otis gets strong competition for elevator business from a well-diversified giant, Westinghouse Electric Corp.

Otis has just announced it will exchange stock for the assets of Baker-Raulang Co., of Cleveland, maker of industrial materials handling and mining equipment. Two years ago, Baker-Raulang acquired Lull Corp., of Minneapolis. This firm, now Baker-Lull Corp. makes trucks, tractors, and tractor attachments. Total 1953 sales of both firms were about $12 million.

If Baker-Raulang stockholders approve, their assets will be exchanged for Otis stock at the rate of one share of Otis for every 3.74 shares of Baker-Raulang. B-R would retain enough assets to retire its preferred stock in liquidation.

This is not the first attempt Otis has made to diversify during its long history. Years ago, for instance, the company pioneered in materials handling equipment. And for a brief period before World War I it even produced an automobile, the "Sultan." It now does a sizeable volume of defense work, partly through an electronic engineering firm it acquired last year.

Pencil sharpener

Survey shows competition will get even tougher

Construction volume will remain at present high levels and may even increase during the next six months. Materials and labor costs will stay about the same. But competition will keep on getting tougher.

That's the opinion turned up by a survey of local chapters made early this month by the Associated General Contractors of America, which AGC published this week. It draws attention once more to something which ENR has often noted during the past year or so: though construction work keeps mounting, so does competition among contractors. For during the past 15 years, contractors' capacity to work has risen even faster than the increase in physical volume of work.

• **Almost unanimous**—If there was one thing in the AGC survey about which contractors were almost unanimous, it was that competition is going to get even tougher. Almost 90% of those answering the survey said they expect an increase in competition. Some contractors ascribed this partly to improved equipment. Some felt it was due to this year's unusually favorable construction weather, which permitted them to finish jobs ahead of time.

Some replies noted that they knew of many contracts being taken at cost or below. There were warnings that some contractors, particularly the newer ones, were making "danger-

ously low" bids to meet fixed costs and keep organizations together.

The next point on which most contractors were most generally agreed is that there would be no important change during the next six months in material prices. About 75% believe this, with about 15% expecting an increase in prices. On labor rates, many of which are fixed by contracts remaining in effect beyond the next six months, about 60% of contractors who answered the survey saw no change. Nearly all the rest expected increases.

• **Grim footnote**—A Dun & Bradstreet report on business failures added a grim footnote last week to the competition story. The credit firm said that 233 general contractors failed during the first half of this year, as against 382 in all of 1953. Building subcontractors were hit even harder, with 406 reported failures in the first half compared with 582 all last year. Other contractors—mostly specialty contractors—did better. There were 34 failures as against 60 for all of 1953.

At this rate, failures in the industry for the 1954 full year would rack up the highest score in many years, in spite of the construction boom.

Depreciating equipment: a postscript

[Editor's Note—ENR has received several letters from readers about the recent piece by Joseph Schwartz on possible ways to apply the new tax law to buying, renting, and depreciating equipment (ENR July 29, p. 91). Readers pointed out that under the old tax law there were two ways to handle sale or trade-in of equipment: (1) to take a profit or loss on the transaction—the method Schwartz used in working out his hypothetical example. (2) to add or subtract profit or loss from the purchase price of the new equipment bought as replacement.

We have asked Mr. Schwartz to show how this second method would affect the cost of replacing equipment annually.]

Joseph J. Schwartz
Attorney & C.P.A.
Schwartz & Meyers
New York City

It is true that under the previous Internal Revenue Code there were two methods of handling the sale or trade-in of an asset. These methods have not been changed by the new code.

Under the first method, where you sell one asset and then purchase a new one, you report a profit or loss on the disposal of the old asset and then pick up the new asset with a basis equal to its full cost.

Under the second method, you trade in the old asset together with an additional cash amount in return for a new one. Here you do not report a profit or loss on the transaction. Instead, you adjust the depreciation basis of the new asset by adding to or subtracting from the cost of the new asset the profit or loss on the trade-in. Or to put it another way, to get the basis of the new asset you add to the adjusted basis of the old asset the additional cash amount paid for the new one.

In my original illustration, under the first method the total cost for a five-year period of replacing a $15,000 tractor annually was $3,750. Under the second method this cost would be $4,041.60. I used only the first method in my illustration because this method is easier to follow and because the total cost is essentially the same under both methods.

It might be interesting at this point to demonstrate how both methods work out under the new law, assuming a 50% corporate tax rate and assuming that the tractor has a five-year life and no salvage value. (Under the new declining balance method the annual depreciation rate would be 40%, or twice the straight-line rate, applied to the balance of cost left after subtracting depreciation already taken).

• The first method

On January 1, 1954 your company purchases the tractor for $15,000.

On December 31, 1954 your company deducts $6,000 for depreciation on its tax return (40% of $15,000), and sells the tractor for $12,000. Since the basis of the tractor at December 31 is $9,000 ($15,000 cost less $6,000 depreciation) and it is sold for $12,000 your company reports a capital gain of $3,000 on the sale and pays a 25% capital gains tax, or $750. Your company then adds $3,000 to the $12,000 received for the old tractor and buys a new one for $15,000 on January 1, 1955. If your company is in the 50% tax bracket, the $6,000 deduction at December 31, 1954 has saved it $3,000 in taxes, so that the net cash outlay for the new tractor on January 1, 1955 is zero. Its only cost is the

How the annual trade-in policy can work with a $15,000 tractor

		Cash Outlay
1/1/54—Cost	**$15,000.**	
12/31/54—less, depreciation (40%)	6,000.	
adjusted basis of old tractor	6,000.	0
add, cash payment for new one	3,000.	
1/1/55—Basis of new tractor	**12,000.**	
12/31/55—Less, depreciation (40%)	4,800.	
adjusted basis of old tractor	7,200.	
add, cash payment for new one	3,000.	$600.
1/1/56—basis of new tractor	**10,200.**	
12/31/56—less, depreciation (40%)	4,080.	
adjusted basis of old tractor	6,120.	
add, cash payment for new one	3,000.	960.
1/1/57—basis of new tractor	**9,120.**	
12/31/57—less, depreciation (40%)	3,648.	
adjusted basis of old tractor	5,472.	
add cash payment for new one	3,000.	1,176.
1/1/58—basis of new tractor	**8,472.**	
12/31/58—less, depreciation (40%)	3,388.80	
adjusted basis of old tractor	5,083.20	
add, cash payment for new one	3,000.	1,305.60
Total cash outlay		**$4,041.60**

How annual trade-ins would work at lower trade-in allowances

		Cash Outlay		Cash Outlay		Cash Outlay
	$11,000		$10,000		$9,000	
1/1/54	15,000.		15,000.		15,000.	
12/31/54	6,000.		6,000.		6,000.	
	4,000.	$1,000.	5,000.	$2,000.	6,000.	$3,000.
1/1/55	13,000.		14,000.		15,000.	
12/31/55	5,200.		5,600.		6,000.	
	7,800.		8,400.		9,000.	
	4,000.	1,400.	5,000.	2,200.	6,000.	3,000.
1/1/56	11,800.		13,400.		15,000.	
12/31/56	4,720.		5,360.		6,000.	
	7,080.		8,040.		9,000.	
	4,000.	1,640.	5,000.	2,320.	6,000.	3,000.
1/1/57	11,080.		13,040.		15,000.	
12/31/57	4,432.		5,216.		6,000.	
	6,648.		7,824.		9,000.	
	4,000.	1,784.	5,000.	2,392.	6,000.	3,000.
1/1/58	10,648.		12,824.		15,000.	
12/31/58	4,259.20		5,129.60		6,000.	
	6,388.80		7,694.40		9,000.	
	4,000.	1,870.40	5,000.	2,435.20	6,000.	3,000.
Total cash outlay		**$7,694.40**		**$11,347.20**		**$15,000.**

$750 capital gains tax. (Even this tax can be deferred until after the end of 1955 by waiting until January 1, 1955 to sell the old tractor, so that the capital gain on the sale is reported in 1955 instead of 1954). The new tractor has a $15,000 basis for depreciation and the process is repeated, at a net cost of $750 each year.

• The second method

Your company purchases the $15,000 tractor on January 1, 1954 (see left-hand table on p. 53). On December 31, 1954 it takes a $6,000 depreciation deduction on its tax return and then trades in the old tractor plus $3,000 in cash for a new one. There is no capital gain reported on the trade-in, but instead the basis of the new tractor is adjusted for depreciation purposes to $12,000. This is done by taking the basis of the old tractor at December 31, 1954, which is $9,000 ($15,000 original cost less $6,000 depreciation), and adding it to the $3,000 cash payment. Again as in the first method the company saves $3,000 in taxes by the $6,000 deduction, and there is no cash outlay on January 1, 1955 for the new tractor.

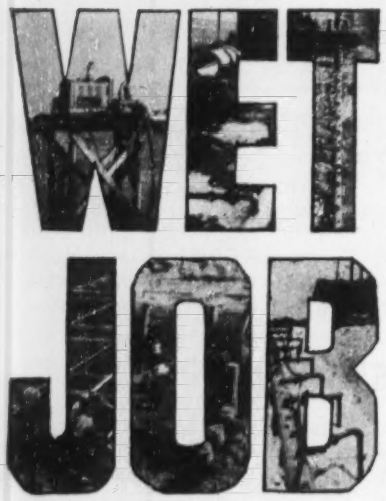
On December 31, 1955 the company takes a depreciation deduction of $4,800 on its tax return (40% of $12,000) and again trades in the tractor plus $3,000 in cash for a new one. At this point a cash outlay of $600 is required, which is the difference between $3,000 and $2,400, the amount of taxes saved by the $4,800 depreciation deduction. The basis of the new tractor on January 1, 1956 is now $10,200 ($12,000 less $4,800 depreciation plus $3,000 cash).

On December 31, 1956 your company's depreciation deduction is $4,080 (40% of $10,200). This time when it trades in the tractor plus $3,000 in cash for a new one, the cash outlay required is $960, which is the difference between $3,000 and $2,040, the amount of taxes saved by the $4,080 depreciation deduction.

Similarly, at the end of the fourth year the cash required is $1,176 and at the end of the fifth year it is $1,305.60. Total cash outlay for five years: $4,041.60.

The above computations assume a trade-in value of $12,000. If the trade-in value should be lower, the cost of replacing the tractor annually will increase under this second method just as it did under the first method in my original illustration. The right-hand

IF IT'S A



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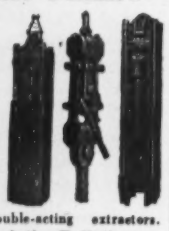

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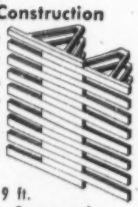

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table illustrates the replacement costs under the second method where the trade-in values are $11,000, $10,000, and $9,000.

It is interesting now to compare the total replacement costs for a five year period under both methods:

If the trade-in or resale value at the end of the year is:	Under the first method	Under the second method
$12,000.	$3,750.	$4,041.60
11,000.	7,500.	7,694.40
10,000.	11,250.	11,347.20
9,000	15,000.	15,000.

Of course further refinements of these depreciation methods suggest themselves and they can be computed and adapted to particular situations. One such device might be the trading in of the asset at the end of the first year followed by outright sale at the end of the second year. This might result not only in reducing the replacement cost, but also in deferring the payment of any capital gains tax at all until after the second year.

Other combinations of the two methods will produce other unusual results. Needless to say, each company's tax situation should be analyzed in the light of these new depreciation methods and procedures so that it can take advantage of the method best suited to it.

Business briefs . . .

• **Big pipeline scheme** is in the works for the Rocky Mountain and Southwest regions. A group headed by Dallas oilman Jack Frost and Wiley F. Moore, Georgia businessman, plans a $100-million oil pipeline system with two refineries. Construction is expected to start soon after Jan. 1. The line will run from Glendive, Mont., to Guernsey, Wyo., and from there to Coolidge, Ariz., and on to Wink, Texas. Products lines will run from Coolidge to Phoenix and Tucson.

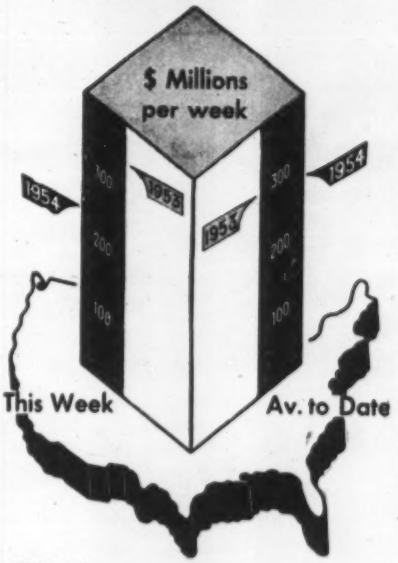
• **Housing starts** in August totaled 111,000, a good showing for this time of year, reports the Depts. of Commerce and Labor. Home starts are running ahead of last year and seem likely to top all past years except 1950.

• **Nonfarm mortgages** of $20,000 or less totaled $12.2 billion through July, according to the Home Loan Bank Board. This figure, which offers a close approximation of home mortgages, is 7% ahead of 1953.

• **Big power plant**—American Gas & Electric Co. will build a $26.4-million power plant at Glen Lyn, Va., more than doubling present capacity.

Activity This Week

As reported to ENR (In millions of dollars)



*6-day week

Amount of contracts let

	This Week	Cumulative 39 wks 1954	1953	% chge
Federal	$20.1	$920.5	$1,155.0	−20
State and municipal	103.2	3,738.9	3,766.9	−1
Total public	123.3	4,659.4	4,921.9	−5
Total private	110.6	6,168.8	6,474.5	−5
U. S. total	$233.9	$10,828.2	$11,396.4	−5

Contracts by type of work

Waterworks	$10.8	$175.2	$183.4	−4
Sewerage	5.1	281.7	334.4	−16
Bridges	7.6	389.1	514.8	−24
Highways	41.5	1,443.4	1,360.5	+6
Earthwork, waterways	2.1	207.0	299.7	−31
Buildings:				
Public, excl. hsg.	36.9	1,324.3	1,276.3	+4
Housg., public	6.6	183.0	321.8	−43
Housg., private	56.6	3,210.8	2,759.7	+16
Commercial	22.0	1,013.9	911.3	+11
Industrial	24.2	1,455.2	2,046.0	−29
Unclassified	20.5	1,144.6	1,388.5	−18
Total	$233.9	$10,828.2	$11,396.4	−5

NOTE: Minimum size projects included are: waterworks and waterways $34,000; other public works $60,000; industrial buildings $82,000; other buildings $300,000.

New capital for construction

(millions of dollars)

	Week of Sept. 23 1954	Cumulative 38 Wks 1954	% chge '53-'54
Corporate securities	$82.1	$2,170.6	−36
State and municipal:			
All except housing	220.9	4,012.7	+32
Housing	...	91.0	−57
Federal loans	8.8	92.1	+3
Federal aid	...	673.0	−13
Total non-federal	$318.8	$7,039.4	−6
Federal appropriations:			
In U. S.	...	$2,073.3	+32
Outside U. S.	...	33.2	+15
Total new capital	$311.8	$9,145.9	+1

ENR cost and volume indexes, 1954

		Base years = 100 1913	1926	1949
Construction cost	9/23	640.38	307.83	134.25
	9/2†	640.68	307.97	134.31
Building cost	9/23	454.32	245.59	129.15
	9/2†	454.28	245.57	129.13
Volume	Aug.	525	218	152
	July	547	222	158

†Official ENR index for September.

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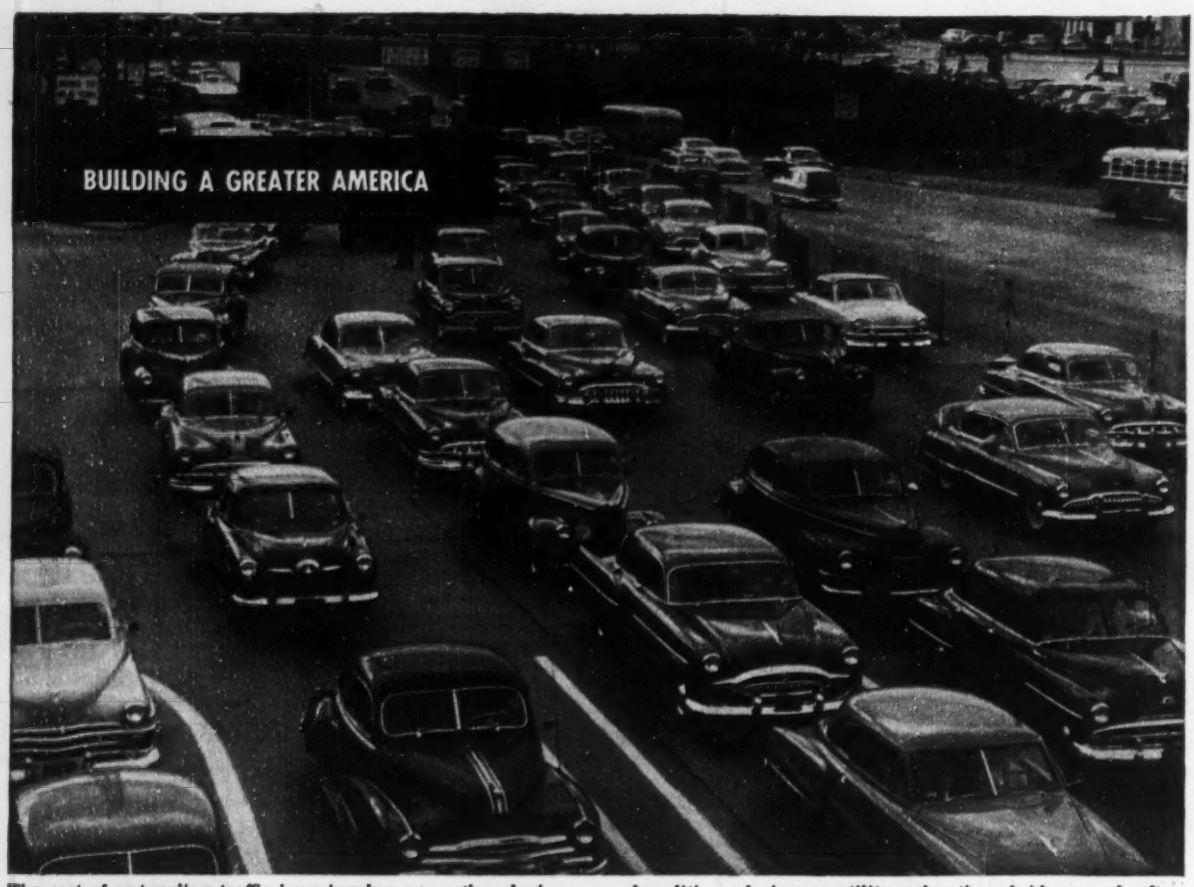


The cost of untangling traffic jams involves more than laying concrete. Economic and traffic studies, right-of-way acquisition, demolition, drainage, utility relocation, bridges, and often buildings are also part of the highway picture.

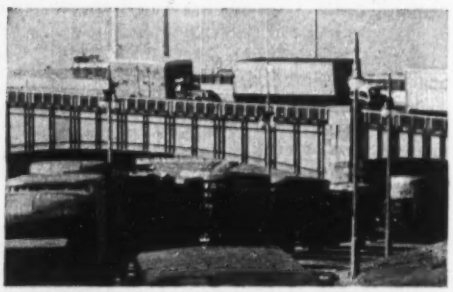
Needed: $50 Billion Worth of Highways

MOTOR VEHICLE REGISTRATIONS now top 56,000,000 – up more than 110% since 1931. Highway mileage, in the same time, has increased only 10%. In spite of $17 billion poured into highway construction and maintenance since 1946, highway officials say we're slipping behind, need $50 billion more in the next 15 years.

A nation that needs $3.5 billion a year in new highways – just to keep up with itself – both demands and produces a strong economy and a strong construction industry.

The men who guide, produce and pay for this work must have wide-angle vision. They must integrate earthmoving, paving, drainage, bridge structures, toll collecting facilities, and many other problems that go with highway construction. On top of their technical skills they must know financing, costs, labor relations, logistics, local ordinances, governmental activities, and other non-technical subjects.

Engineering News-Record, with its wide-angle reporting, is the only publication that keeps them informed on all these forces and factors that affect building and construction. That's why, as this greater America is built, you'll find your most important customers reading Engineering News-Record.



Good highways speed transportation of people and goods, opening the door for new economic activity and construction of all types in new areas.

Photos courtesy of Standard Oil Co. (N.J.)

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CLOSING DATE: Friday 10:30 A.M. for issue dated the following Thursday.

SEND COPY TO: Official Proposal Division, Engineering News-Record, 330 West 42nd Street, New York 36, N. Y.

Bids: October 20, 1940

Indiana Toll Road Commission
309 W. Washington Street
Old Trails Building
Indianapolis, Indiana

NOTICE TO BIDDERS

Contract C-26
Contract C-27
Contract C-26 and C-27

Sealed proposals will be received by the Indiana Toll Road Commission at or before 11:00 A. M., Central Standard Time, October 20, 1954, for the performance of each of the contracts enumerated above.

CONTRACT NO. C-26

The grading, drainage, structures and paving of approximately 3.5 miles in Construction Section C-26 of the Indiana East-West Toll Road beginning at a point about 5,122 feet east of the Sycamore Road at Toll Road Centerline Station 3851+10 in St. Joseph County and extending eastwardly to a point about 2,062 feet west of Mayflower Road at Toll Road Centerline Station 4035+00 in St. Joseph County, Indiana. The approximate quantities of the major items of construction are as follows:

Common Excavation	380,100 Cu. Yds.
Borrow	105,000 Cu. Yds.
10" Reinforced Concrete Pavement	98,200 Sq. Yds.
Culvert Pipes and Underdrains	7,310 Lin. Ft.
14" Dia. Cast-in-Place Piling	5,980 Lin. Ft.
Concrete for Structures	1,425 Cu. Yds.
Reinforcing Steel	221,200 Lbs.
Fabricated Structural Steel	617,200 Lbs.

CONTRACT NO. C-27

The grading, drainage, structures and paving of approximately 3.4 miles in Construction Section C-27 of the Indiana East-West Toll Road beginning at a point about 2,062 feet west of Mayflower Road at Toll Road Centerline Station 4035 + 00 in St. Joseph County and extending eastwardly to a point about 75 feet west of the western edge of the St. Joseph River at Toll Road Centerline Station 4213 + 43.5 in St. Joseph County, Indiana. The approximate quantities of the major items of construction are as follows:

Common Excavation	619,000 Cu. Yds.
Borrow	10,000 Cu. Yds.
10" Reinforced Concrete Pavement	94,500 Sq. Yds.
Culvert Pipes and Underdrains	8,500 Lin. Ft.
14" Dia. Cast-in-Place Piling	4,510 Lin. Ft.
Concrete for Structures	1,930 Cu. Yds.
Reinforcing Steel	302,300 Lbs.
Fabricated Structural Steel	750,500 Lbs.

The work covered by Contract C-26 and C-27, which covers a combination of Construction Sections C-26 and C-27, is the construction as above described for the individual Construction Secitons, taken together.

Copies of the Plans, Specifications and Proposal Forms for said Contracts are available for public inspection or purchase at the office of the Chief Engineer, Indiana Toll Road Commission, 309 W. Washington Street, Indianapolis, Indiana. These documents may be purchased from said Chief Engineer for the following sums, per set, which sums are non-returnable:

Standard Specifications for the Indiana East-West Toll Road	$5.00
Plans, Special Provisions and Proposal Forms, per set, per Construction Section	$25.00
Informational Drawings	
Cross-Sections, per set, per Construction Section	$25.00
Soil Plan and Profiles, per set, per Construction Section	$5.00

All Proposals must be on the form prescribed by the Commission and must comply with the terms and conditions set forth in the Contract Documents.

Contractor's statement for qualification on the forms supplied by the Commission will be required from all Bidders.

Each Proposal must be accompanied by a Proposal Guaranty in the amount of five (5%) per cent of the total price bid per Construction Section covered by the Contract. If the Bidder shall tender bids for two or more Contracts which include the same Construction Section, the Construction Section thus duplicated in the bidding need be counted only once in determining the total amount of the Proposal Guaranty. The Proposal Guaranty shall be in the form of an acceptable surety bond or certified check on a solvent bank.

If the Bidder is an out of state corporation, he shall be required to furnish a certificate from the Secretary of State of Indiana as evidence that the corporation has complied with the Indiana Foreign Corporation Statutes, and that the corporation is authorized to transact business in the State of Indiana.

All bids must be received at or before 11:00 A. M., Central Standard Time, October 20, 1954, in the offices of the Indiana Toll Road Commission, 309 W. Washington Street, Indianapolis, Indiana. At said hour, the bid box will be publicly opened and the bids read.

The award of any of the above-enumerated Contracts, if any award be made, will be to the Bidder or Bidders whose Proposal or combination of Proposals is lowest and best for the performance of the work, taken as a whole, and complies with all the prescribed requirements. The Commission reserves the right to reject any or all Proposals and to waive technicalities.

INDIANA TOLL ROAD COMMISSION
Dr. Dillon Geiger
Chairman
Charles W. Keating
Secretary-Treasurer

Bids: October 6, 1954

The Power Authority of the State of New York

FOR
THE CONSTRUCTION OF THE SUBSTRUCTURES
OF
THE BARNHART ISLAND BRIDGE
AND
A TEMPORARY STEEL TRUSS, FLOATING BRIDGE CONNECTING HAWKINS POINT TO BARNHART ISLAND OVER ST. LAWRENCE RIVER
NEAR MASSENA, ST. LAWRENCE COUNTY, NEW YORK
SPECIFICATIONS NO. 5422-A
ST. LAWRENCE CONTRACT NO. 3

NOTICE TO CONTRACTORS: THE POWER AUTHORITY OF THE STATE OF NEW YORK will receive sealed proposals for the construction of the substructures of the Barnhart Island Bridge and a temporary steel truss, floating bridge connecting Hawkins Point to Barnhart Island over St. Lawrence River, near Massena, St. Lawrence County, New York, until 10:30 A.M. Eastern Standard Time on the 6th day of October 1954 at 270 Broadway, Room 1207A, New York 7, New York, at which time and place proposals will be publicly opened and read aloud.

Plans, specifications and Proposal Forms for the work are on file in the Authority's office and in the offices of the Engineers, Praeger-Kavaragh, 126 East 38th Street, New York, New York; The Hydro-Electric Power Commission of Ontario, 620 University Avenue, Toronto 2, Ontario, and may be inspected by prospective bidders during office hours.

Plans, specifications and Proposal Forms may be obtained from The Power Authority of the State of New York, 270 Broadway, Room 1300, New York 7, New York, on or after September 16, 1954, upon application and pre-payment of a fee of Forty Dollars ($40.00) per set, no part of which will be refunded. Extra sets of plans at $20.00 each or specifications at $20.00 each may be obtained by any contractor who purchases a full set.

Bids must be made upon the proposal forms included in the Contract Documents. Each proposal must be accompanied by draft or certified check payable to the order of The Power Authority of the State of New York for the sum of $50,000.00.

The right is reserved to reject any or all bids.

W. S. CHAPIN
GENERAL MANAGER

Bids: October 26, 1954

Savannah Beach Toll Road
Chatham County

Sealed proposals will be received in the County Commissioners Office until 11 o'clock A. M. Tuesday, October 26, 1954 at their office in the Court House, Savannah, Georgia, for furnishing all labor, materials and other things necessary for the construction of 9.781 miles of grading, paving and bridges, located in Chatham County on what is known as the Savannah Beach Road, U.S. Route 80, beginning at the intersection of President Street and Liberty Street in Savannah and extending eastward to a point north of Bull River on the present Savannah Beach Road, including a spur from a point on Oatland Island to the present Savannah Beach Road, on Whitemarsh Island.

Plans and specifications are on file in the office of the undersigned where they may be obtained for $5.00 The work will be let in one contract.

All bids subject to approval of the U.S. Engineer as to St. Augustine Creek Bridge proposal.

The Commissioners of Chatham County and Ex-Officio Judges reserve the right to reject any and/or all bids and to waive any and all formalities in presentation of bids.

CHATHAM COUNTY BOARD OF PURCHASE
JAMES P. HOULIHAN, CHAIRMAN
LILLIAN E. GROTHEER, CLERK
Commissioners of Chatham County and Ex-Officio Judges

(Continued on page 58)

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OFFICIAL PROPOSALS
(Continued from preceding page)

Bids: October 14, 1954

Pennsylvania Turnpike Commission
Harrisburg, Pennsylvania

NOTICE TO BIDDERS

Sealed proposals will be received by the Pennsylvania Turnpike Commission, through the Chairman, 11 North Fourth Street, Harrisburg, Pennsylvania, until 10:00 a.m., Eastern Standard Time, the 14th day of October 1954, and immediately thereafter will be taken to the Public Utility Commission's Hearing Room No. 1, North Office Building, State Capitol, Harrisburg, Pennsylvania, and publicly opened and read aloud for the following contract.

For the construction of structures and the grading, drainage and paving of the Turnpike Section 35-H, part of the Northeastern Extension of the Pennsylvania Turnpike in Lower Milford and Upper Milford Townships, Emmaus Borough, and Lower Macungie Township, Lehigh County, Commonwealth of Pennsylvania. This section being situated as follows:

Beginning at a point approximately 3051 feet southeast of the centerline of existing Legislative Route 39106 at Turnpike station 166+75 in Lower Milford Township, Lehigh County; thence in a northwesterly direction 21,654.22 feet to Turnpike station 383+29.22 at a point approximately 1507 feet northwest of the centerline of Legislative Route 39026 in Lower Macungie Township, Lehigh County, a distance of approximately 4.10 miles.

The approximate quantities of the principal items are as follows:

Class I Excavation	1,174,978 cubic yards
Class II Excavation	22,989 cubic yards
Class 2A Excavation	2,729 cubic yards
Special Subgrade	174,676 square yards
Reinforced Concrete Pavement	111,933 square yards
Class A Concrete	4,017 cubic yards
Class B Concrete	3,614 cubic yards
Plain Steel Bars	848,034 pounds
Fabricated Structural Steel	1,332,550 pounds
Median Divider	19,540 lineal feet

Copies of plans, specifications and other contract documents, including cross-sections, are on file and open to public inspection at the office of the Pennsylvania Turnpike Commission located at Harrisburg, Pennsylvania, on 1 October 1954. Plans, specifications, cross-sections and other contract documents will be available by this date for inspection or for mailing to prospective bidders. Copies of Specifications for grading, drainage, paving and structures may be purchased from the Pennsylvania Turnpike Commission for the sum of five (5) dollars per copy. Copies of cross-sections may be purchased from the Pennsylvania Turnpike Commission for the sum of fifty (50) dollars per set.

Plans and contract documents, for this section exclusive of cross-sections and specifications, may be purchased from the Pennsylvania Turnpike Commission for the sum of twenty (20) dollars for each set. No refund will be made for plans returned unless the project is withdrawn from letting by the Pennsylvania Turnpike Commission.

Remittances are payable by check or P. O. money order to the Pennsylvania Turnpike Commission and must accompany requests for drawings, specifications, contract documents, and cross-sections.

The character and amount of bid security to be furnished by the bidder is stated in the Instructions to Bidders.

The Commission reserves the right to waive any informalities in or to reject any or all bids.

No bids may be withdrawn for thirty (30) days after the scheduled closing time for receipt of bids.

PENNSYLVANIA TURNPIKE COMMISSION
James F. Torrance
Secretary and Treasurer

Harrisburg, Pennsylvania
22 September 1954

OFFICIAL PROPOSALS

Bids: October 21, 1954

New Jersey Turnpike Authority

CONTRACT No. N-24

Proposals are invited for Contract No. N-24 which involves the fabrication and erection of superstructure steelwork for the West Viaduct in Jersey City, Hudson County, New Jersey, all in connection with the construction of the Newark Bay-Hudson County Extension of the New Jersey Turnpike.

The principal items of work include:

Structural Steel	9,600,000 Lbs.
Furnishing Metal Railing	6,580 Lin. Ft.

Proposals will be received at the New Jersey Turnpike Authority Administration Building, New Brunswick, New Jersey, until 11:00 o'clock Eastern Standard Time on the morning of October 21, 1954, at which time and place said proposals will be publicly opened and read.

Bidders must submit with their proposal a Contractor's Financial and Equipment Statement.

Contract documents may be examined during office hours after September 28, 1954, at the office of the Authority and at the office of the Consulting Engineers, Howard, Needles, Tammen & Bergendoff, 55 Liberty Street, New York 5, New York. Contract documents will be furnished upon payment of Fifteen Dollars ($15.00) for each set, upon application to the Authority. Contract documents are not required to be returned and the payment will not be refunded.

NEW JERSEY TURNPIKE AUTHORITY
Paul L. Troast, Chairman

September 23, 1954

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Official Proposal Division
ENGINEERING NEWS-RECORD
New York 36, N. Y.

OFFICIAL PROPOSALS

Sealed Bids will be received at the Department of Highways, Room 400, Central Highways Office Building, 1221 East Broad Street, Richmond, Virginia, Until 10:00 A.M., Monday, October 11, 1954, for the following:

Rt. 200, Proj. 3459 Contract No. 1, Lancaster & Middlesex, 9,985 ft. Substructure Greys Point, Cu. Yds. Conc. 107,839, Lbs. Reinf. Steel 650,000, Lbs. Str. Steel 75,745, Plans $15.00.

Rt. 200, Proj. 3459 Contract No. 2, Lancaster & Middlesex, 9,985 ft. Superstructure Greys Point, Cu. Yds. Conc. 6,292, Lbs. Reinf. Steel 1,450,000, Lbs. Str. Steel 25,566,970, Plans $15.00.

Plans and specifications are on file at the Richmond and Local District Offices. Proposal guaranty shall be certified check or bid bond in the amount specified in the Va. Department of Highways Road & Bridge Specifications, dated April 1, 1954. Bid Bond to be on form furnished by the Virginia Department of Highways. The Commission reserves the right to reject any or all proposals submitted in response to this advertisement, and to waive technicalities as it may deem best for the interest of the State.

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4258) will be received at Yuma, Ariz., until November 3, 1954, for furnishing labor and materials for earthwork, concrete lateral lining, and structures, Unit 2, Dome and Wellton-Mohawk Distribution Systems, Wellton-Mohawk Division, Gila Project. Location: in Yuma County, near Ligurta, Ariz. Principal items are: 574,000 c.y. excavation for laterals, channels and dikes, and structures; 114,000 c.y. trimming earth foundations for concrete lateral lining; 7,115 c.y. concrete in lateral lining and structure; 4,986 l.f. furnishing and installing various sizes and kinds of precast concrete pipe; 112 gates, furnishing and installing various sizes and kinds of slide gates; and other work. Completion time 365 days. For particulars, address Bureau of Reclamation, Yuma, Ariz.; or Building 53, Denver, Colo. W. A. Dexheimer, Commissioner.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4240) will be received at Huron, South Dakota until October 21, 1954, for furnishing labor and materials for: additions and modifications to Watertown Substation for 230-kilovolt operation, Transmission Division, South Dakota, Missouri River Basin Project. Location: 3 miles east of Watertown Substation. Principal items are: 2,325 cu. yds. excavation; 100,000 pounds, furnishing and erecting steel structures; 300 cu. yds. reinforced concrete; 1,800 lin. ft. furnishing and installing aluminum tubing bus; 13,900 lin. ft. installing electrical cable and wire; and other work. Completion time 400 days. For particulars, address Bureau of Reclamation, Huron, South Dakota; or Building 53, Denver Federal Center, Denver, Colorado. W. A. Dexheimer, Commissioner.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4255) will be received at Casper, Wyoming until November 2, 1954, for furnishing labor and materials for Glendo Dam, Power Plant Foundation, and Roads. Location: near Glendo, Wyoming in Platte County. Principal items are: excavation, 4,175,000 cu. yds; earth fills in embankments, 2,935,000 cu. yds; concrete 44,000 cu. yds; installing tunnel liner, surge tank, pensteck, gates, hoists and metalwork, 2,550,000 pounds; and other work. Completion time 1500 days. For particulars, address Bureau of Reclamation Casper, Wyoming; or Building 53, Denver Federal Center, Denver, Colorado. W. A. Dexheimer, Commissioner.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4256) will be received at Red Bluff, California, until 10:00 A.M., October 20, 1954, for furnishing labor and materials for earthwork and structures, Corning Canal, Central Valley Project, California. Location: near Red Bluff, California in Tehama County. Principal items are: 675,200 cu. yds. of excavation; 200,000 cu. yds. of earth lining for canal; 2100 cu. yds. of concrete; prestressed precast concrete bridge decks for 6 bridges; 10 ft. by 11 ft. radial gate and miscellaneous metalwork; and other work. Completion time 300 days. For particulars, address Bureau of Reclamation, Red Bluff, California; or Building 53, Denver Federal Center, Denver, Colorado. W. A. Dexheimer, Commissioner.

OFFICIAL PROPOSALS

Bids: Oct. 14, 1954

Delaware River Port Authority Administration Building Camden, New Jersey

TRUSS SPANS SUBSTRUCTURE, GLOUCESTER ANCHORAGE TO NEWTON CREEK

CONTRACT NO. G-1

Sealed bids will be received for Truss Spans Substructure from Gloucester Anchorage to Newton Creek, for new Bridge between Packer Avenue, Philadelphia, Pennsylvania, and Gloucester, New Jersey, known as Contract No. G-1, at the office of the Executive Director of the Delaware River Port Authority, Administration Building, Bridge Plaza, Camden, New Jersey until 2:00 P.M., (Eastern Standard Time), October 14, 1954 at which place and time they will be publicly opened and read by the Authority.

A more complete description of the work and full information for bidders are given in the Contract Documents and Specifications for this Contract, which may be obtained upon a deposit of $10.00 which will be remitted upon receipt of bid or the return in good condition of the copies so taken within thirty days after the opening of bids.

Each proposal must be accompanied by a certified check in the sum of $50,000.00 payable to the Delaware River Port Authority and drawn upon a National or State Bank or Trust Company having an office or place of business either in Philadelphia, Pennsylvania, or Camden, New Jersey, and must not be enclosed with the sealed bid. The surety's consent must be shown. The bidder to whom the contract is awarded will be required to furnish a performance and Labor and Materialmen's Bond in the sum of 100 per cent.

The Authority will afford prospective bidders an opportunity to inspect the site of the work.

The Authority reserves the right to waive any informalities in the bids received; to reject any or all bids, and to award the contract only to those experienced in this class of work and to the bidder whose proposal is deemed by the Authority to be most advantageous to the public interest.

DELAWARE RIVER PORT AUTHORITY
JOSEPH K. COSTELLO
Executive Director

EMPLOYMENT

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

ESTIMATOR: FOR Highway and Railroad Bridge Construction and Restoration in Southeast Ohio and adjoining states. Must have supervisory background and be cost conscious. Thorough experience essential. State experience, references, personal information and salary expected. Good chance for the right person. Reply P-3847, Engineering News-Record.

JR. CIVIL Engineers, Instrumentmen, Map Draftsmen needed for expanding Highway Program in Nevada. State Personnel Department, Carson City, Nev.

ENGINEERS — MUNICIPAL Experience: The City of Las Vegas, Nevada, due to rapid expansion has permanent openings for Engineers and Draftsmen experienced in municipal design. Write to City Engineer, giving background, samples of work and salary range.

STRUCTURAL STEEL Detailers and Checkers by Fabricators in Western Canada required for all types of buildings, bridges, etc., also Reinforcing Concrete detailers. Good salary and conditions for experienced man. P-3825, Engineering News-Record.

WANTED: EXPERIENCED concrete reinforcing bar designer, checker, detailer. Salary based on experience and ability. Employee benefits. Southern Engineering Company, Box 1087, Charlotte 1, N. C.

ENGINEERS, COMPETENT and experienced in design and supervision of construction and as resident engineers on water works, sewer systems, sewage and water treatment. State experience, when available, salary requirements, references. P-3452, Engineering News-Record.

SUPT. FOR Gen'l Contractor. Must be familiar with concrete construction, brickwork, etc. and capable of supervising subcontractors work. State experience, when available and salary requirements. P-3934, Engineering News-Record.

SALESMAN STRUCTURAL Steel — for established Eastern Penna. Fabricator. Must be top grade man with proven ability and broad experience. Give full particulars in reply to P-3891, Engineering News-Record.

EXPERIENCED ESTIMATOR, Graduate Engineer preferred, capable of preparing estimates, pricing, purchasing, subcontract negotiation and job management. Permanent position with well established and progressive general contractor located in Northwestern Ohio specializing in industrial and commercial buildings, public works and bridges. Send complete history including education, past experience, references and salary expected. P-3958, Engineering News-Record.

SALES AND Development Engineer (C.E.) interested in opportunity to promote new developments in light weight concrete and act as technical representative of chemical manufacturer—to call on engineers, architects, concrete products manufacturers. P-3952, Engineering News-Record.

POSITIONS OPEN in estimating and purchasing departments of rapidly growing construction corporation in northern New York State. Full detailed information requested in first letter. P-3994, Engineering News-Record.

PLANT SUPERINTENDENT—Asphalt Plant—year-round. Location in the East. Must be neat and capable of taking full charge. Apply giving full qualifications, age, etc. P-4010, Engineering News-Record.

SUPERINTENDENT OF Public Works. In March 1955, the Town of Wellesley, Mass. will combine several Departments to form a new Puolic Works Department. A position as Superintendent will then be open. Those interested in making application for this position should write details of training, experience and salary required to the address below. A detailed prospectus of the position will be sent to such applicants. Address: J. Austin Peckham, 23 Central St., Wellesley 81, Mass.

DRAFTSMAN WANTED—Experienced in detailing miscellaneous and/or structural steel by Bushnell Steel Company, P. O. Box 2579, Jacksonville, Florida. Reply giving brief resume of experience, education, availability, and salary expected.

STRUCTURAL ENGINEER Wanted — Experienced in designing and estimating structural steel, by Bushnell Steel Company, P. O. Box 2579, Jacksonville, Florida. Reply giving brief resume of experience, education, availability, and salary expected.

WANTED — CONTRACTOR'S Cost Engineer, background in both building construction and cost accounting desirable. Must be familiar with general phases of building construction in relation to cost keeping. Will supervise field timekeepers and cost keepers. Please give references and record of work. J. M. Odom, General Contractor, P. O. Box 774, Austin, Texas.

HYDROLOGIST — GRADUATE engineer, over 35, strong on hydrology, to perform hydrologic analyses for work ranging from small drainage to hydro-electric multiple purpose reservoirs. Must have good administrative capabilities. Permanent assignment in New York City. Replies which contain Complete details of education, experience, checkable references and past salary records will be acknowledged. P-4016, Engineering News-Record.

HYDRO-ELECTRIC Engineer — Interesting overseas assignment for hydro-electric development manager to organize, supervise and direct Field Investigation and Design of multiple-purpose projects; later taking charge of Construction Supervision. Must be graduate engineer with minimum 15 years sound experience on Survey, Design and Construction of dams, power plants and massive structures. Replies which contain Complete details of education, experience, checkable references and past salary records will be acknowledged. P-4015, Engineering News-Record.

CIVIL ENGINEERS with considerable experience in highway dept. supervision, office engineering or maintenance engineering (highway and equipment) wanted for overseas project in the Near East. Salary attractive, living conditions good. Submit complete resume of experience and references. P-4023, Engineering News-Record.

CIVIL OR structural engineer: experienced in structural design for all types building construction. State age, qualifications and salary requirements. Progressive firm located in Eastern Pennsylvania. P-4059, Engineering News-Record.

(Continued on following page)

District Construction Manager

Large national engineering and construction company with headquarters in the midwest seeking graduate engineer with several years varied experience in the mechanical and building phases of construction to serve as construction manager of midwestern district. Position involves the supervision and direction of project superintendents on both building and mechanical type projects, including analysis of costs and methods relating to each project. There will be considerable travel. Experience as a district construction supervisor or project manager on several large projects is desired.

Persons qualified should submit a complete resume stating experience, education and salary requirements. All replies treated confidential. Interviews arranged for qualified applicants.

P-4072, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

ENGINEERS

Foreign Service

Graduate Chemical, Mechanical, and Electrical Engineers with minimum of 5 years' experience. For specialized assignments commensurate with qualifications in various phases of project and process engineering. Write giving full particulars regarding personal history and work experience. Please include telephone number.

Recruiting Supervisor, Box 30

Arabian American Oil Company

505 Park Avenue, New York 22, N. Y.

SOUTH AMERICAN POSITIONS

MILL METALLURGIST for large copper concentrator, to work directly under Asst. Superintendent and be in full charge of all testing research.

YOUNG CIVIL ENGINEERING GRADUATE with some experience in maintenance of track and track equipment for Railroad Department.

GRADUATE MECHANICAL ENGINEER with several years experience in actual supervision of large shops comprising Machine Shops, Plate & Welding Shops, Iron, Steel and Brass Foundries.

Large Copper Company Chile, South America, 3-year contract. Transportation both ways and salary while traveling paid by Company. Good opportunities. In reply give complete details.

P-3739, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

WANTED

2 Office Engineers—experienced setting grades for streets, sanitary sewers, storm drainage and site grading for subdivisions.
1 Map Draftsman—ink and pencil, neat and accurate.
1 Party Chief—experienced in subdivision layout and land survey.
Positions permanent—Contra Costa County, Calif.

P-4075, Engineering News Record
68 Post St. San Francisco 4, Calif.

WANTED

BY NORTHERN OHIO BUILDING MATERIAL PRODUCER AND DISTRIBUTOR —ENGINEER EXPERIENCED IN CONCRETE MIX DESIGN AND HAVING WORKING KNOWLEDGE OF CONSTRUCTION AND PAVING PRACTICES. WRITE, GIVING FULL DATA AS TO EXPERIENCE, AGE, ETC.

P-3879, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

POSITIONS VACANT

(Continued from preceding page)

WANTED: SALES-engineer or qualified person to handle sales and promotion for precast products manufacturer in central Penna. Salary dependent upon qualifications, ability, and effort expended. Reply P-4058, Engineering News-Record.

NORTHERN NEW Jersey concern desires young, graduate engineer with some heavy construction experience to do field surveying and estimating. Send complete resume of experience and salary desired to P-4055, Engineering News-Record.

CITY ENGINEER. The City of Wauwatosa (a progressive and expanding community of forty-five thousand inhabitants, covering an area of 12½ square miles) is seeking a City Engineer to have administrative and technical charge of the municipal engineering department and allied departments. Required: a degree in civil engineering, Wisconsin registration or eligibility thereto, and ten years of progressively responsible civil engineering experience. Maximum age 50 years. Starting salary $700 to $800 per month depending on applicant's qualifications. For further information apply before October 15, 1954 to the Wauwatosa Civil Service Commission, 7616 Harwood Ave., Wauwatosa 13, Wis.

—3—RESIDENT SOILS Engineers—3—New York Consulting Engineer Firm requires experienced and highly qualified soils engineers for interesting foreign assignment on three large earth dams in Middle East. 18 to 36-month durations. Family may accompany. Attractive salary and living allowances. Replies which contain Complete details of education, experience, checkable references and past salary records will be acknowledged. P-4081, Engineering News-Record.

DESIGN ENGINEER—Experience on elevated tanks and towers of modern design. Unusual opportunity with progressive eastern corporation for man with ability to assume complete charge of design, manufacture, and direct erection. P-1107, Engineering News-Record.

SELLING OPPORTUNITIES OFFERED

SALES ENGINEERS — New York City and Rochester, New York territories open with well established national concern selling prefabricated metal products to engineering and construction markets. Positions are permanent and offer excellent future with aggressive, progressive and expanding organization. Engineering degree desirable. Previous sales experience necessary. Ages 24 to 30. Car furnished. Complete training program. Salary and bonus. RW-3855, Engineering News-Record.

WANTED EXPERIENCED Construction Men with knowledge of rock drilling equipment to be trained as Sales Representatives and to work in the Eastern United States. Positions are permanent and offer excellent future with aggressive, progressive and expanding organization. Previous sales experience is necessary. Please give complete resume of experience, qualifications, salary rquirements, and availability. RW-3957, Engineering News-Record.

EMPLOYMENT SERVICES

OVERSEAS PROJECTS Guide to most active construction-engineers, oil co's., gov't & UN groups hiring for foreign projects. Send $1. Cove-McKane Int. GPO Box 126E, NY 1, NY.

POSITIONS WANTED

CONST. ENGR.—20 yrs experience on all types of Construction—Airbases—Canals—Dams—Hospitals—Concrete Bldgs—Wood frame bldgs—office and field work—Masters Degree in Civil—Prefer foreign work—Just off a completed airbase contract—43 yrs old—Available stateside Nov. 5th. Write Box PW-3443, Engineering News-Record.

CONSTRUCTION ENGINEER 42 years old, 12 years experience mechanical and structural supervision, presently employed, primarily interested in foreign assignment, good references. PW-3849, Engineering News-Record.

Structural & Hydraulic Designers Detailers & Draftsmen Engineer for Field & Office—

with actual experience on sewage treatment plant structures and sewers. Include experience, date available, salary desired, in first letter to

GANNETT FLEMING CORDDRY & CARPENTER, INC.
Box 366, Harrisburg, Penna.

DRAFTSMEN

Experienced structural steel detailers and checkers for building work and conveyor detailing. Consulting office with good working conditions, vacation plan, payed holidays, and hospitalization program. Please send complete written information in first letter.

SAMBORN, STEKETEE & ASSOCIATES
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WANTED

EXPERIENCED SALESMAN

For Heavy Construction Equipment
In Northern New Jersey
Must know Territory

SW-3880, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

POSITIONS WANTED

COST AND Office Engineer (27) 3 years steam power plants, 3 years AEC, seeks construction job in U. S. PW-3833, Engineering News-Record.

OFFICE MANAGER familiar all phases construction contracting business. Many years experience large projects Branch Offices Latin America. Speaks, reads, writes Spanish. Available immediately. PW-3893, Engineering News-Record.

CIVIL STRUCTURAL Engineer age 32, B.S. Degree, registered professional engineer, 8 yrs. varied experience in building, industrial and bridge structures including 1 yr. construction supervision and 2 yrs. as chief design engineer of small consulting firm. Sound administrative and engineering ability. Desires position with reputable manufacturer or fabricator where past experience would be of value and future is offered. Mid Atlantic States preferred. PW-3982, Engineering News-Record.

DRAFTSMAN-CHIEF or Asst. Chief, 11 yrs. exp. civil, piping, struct. and mech. Age 31. Any location considered. PW-3985, Engineering News-Record.

CIVIL-STRUCTURAL Engineer, P.E., N.Y., N.J., & Wash.; thirty years diversified experience; bridges, building construction, industrial plants; planning, designs, specifications, supervision, office, field. Desires permanent connection of responsibility with growing concern; domestic or abroad. PW-3974, Engineering News-Record.

STRUCTURAL ENGINEER, registered and licensed, over 25 years of first class experience on projects of magnitude desires to enter into partnership with elderly engineer or architect about to retire. PW-3975, Engineering News-Record.

REGISTERED C.E. 25 years experience. Roads, bridges, sewers, public works, etc. Design, construction, administration, specification writing. Desires office position. PW-3986, Engineering News-Record.

MECH. FIELD supt. heavy experience in design and construction of industrial bldgs; power and CO_2 plants, refineries and bauxite, also electrical. Ability to produce, control costs, expedite subs. Presently engaged million sq. ft. project. Will consider responsible position only. Relocate. Graduate M.E. Age 41. Available October. A. Weber, 2801 So. Dort Hiway, Box #8, Flint, Michigan.

CONSTRUCTION EXECUTIVE, long New York experience buildings and heavy construction, available for new connection as Project Manager on large operation or as Contractor's executive, where scope will permit full use of ability. Inquiries solicited from contractors requiring top man, qualified to handle all phases, bid to completion. New York area preferred. PW-3661, Engineering News-Record.

GENERAL SUPERINTENDENT—thirty years' experience, thorough knowledge all phases construction work consisting of building, airport, road, railroad, concrete, sewer and drainage, heavy excavation, dams, bulkheads, jetties, estimating, supervision and maintenance of construction equipment. Available now for either foreign or domestic work. References available. Box PW-3023, Engineering News-Record.

(Continued on opposite page)

POSITIONS WANTED
(Continued from the opposite page)

CONSTRUCTION ENGINEER experienced in erection industrial, chemical, oil and gas plants desires job. Not too particular about location. PW-4069, Engineering News-Record.

EXPERIENCED CONSTRUCTION Superintendent wants job. Location immaterial. PW-4079, Engineering News-Record.

SENIOR CIVIL Engineer wants contact; firm or civic, in small place, on sewers; drains; roads; water; refuse; taxes &c. Able & alert. PW-4088, Engineering News-Record.

CONSTR. ENGR.—6 yrs experience on streets and roads, hydro-power, chemical plant, airbases (domestic and foreign). 3 yrs as job engineer or higher. Thoroughly acquainted with costs. Masters in Civil. Seeks position with positive incentive. PW-4017, Engineering News-Record.

ESTIMATOR ENGINEER—BSCE 1951 salary expected $125.00 per wk. PW-4018, Engineering News-Record.

GRADUATE CIVIL Engineer—33—11 years exp. prestressed & reinf. concrete design and construction. Excellent drafting. New York area preferred. PW-4045, Engineering News-Record.

CONSTRUCTION SALES Executive. 20 years experience New York commercial and industrial construction, available for new connection. C.E. Grad., Reg. Prof. Engr. Presently employed as sales manager by New York City firm of engineers and contractors. Inquiries solicited from engineering and construction firms requiring top man to increase sales volume. New York area preferred. PW-4046, Engineering News-Record.

CONSTRUCTION — FIELD Engineer. Registered, age 55. Broad experience design, layout, construction. Waterworks, sanitation, industrial, railroad, development and heavy construction. Available October for construction supervision for owners or engineers. No straight design-estimating. Prefer East or South. PW-4047, Engineering News-Record.

ELECTRICAL—CIVIL Engineer, age 51, married, sober habits; 29 years experience on design and construction of electric, water and sewer lines and facilities; desires field supervision work. J. B. Crozier, Espanola, N. Mex.

ELECTRICAL ENGINEER BSEE PE seven years heavy industrial experience. Proven ability in plant automation. Presently located far West. Desires to locate in Gulf states area. PW-4026, Engineering News-Record.

EXECUTIVE, THOROUGHLY experienced all phases construction industry, desires connection with progressive, growing builder. PW-4062, Engineering News-Record.

CIVIL ENGINEER M.S.C.E. Regis. California. 6 years experience in hydraulics, specifications and small construction. Presently doing general civil work with utility co. Will relocate. Would consider association with consultant. PW-4064, Engineering News-Record.

ARCHITECTS SUPERINTENDENT. Varied supervisory experience, now employed, desires change. References. PW-4067, Engineering News-Record.

POSITIONS WANTED

LANDSCAPE ARCHITECT—B. S., 5 years experience with contractors, public agencies, consultants. Seeking responsible position with future. Prefer N. Y. metropolitan area. PW-4093, Engineering News-Record.

ESTIMATOR, CHIEF Engineer for heavy construction only. Executive, with broad experience in both field and office on all types of heavy construction, and with proven ability to supervise estimating and engineering departments, invites replies from progressive heavy construction contractors. After twenty years with well established company, desires change. PW-4092, Engineering News-Record.

CONSTRUCTION ENG. Reg. Pro. Eng. 25 years experience in estimating expediting and supervision of general construction of all types. PW-4094, Engineering News-Record.

GENERAL SUPERINTENDENT all forms grouting and subaqueous work, along with soil stabilization and structure restoration. Can assume full job responsibility. 15 years with present company but desire to make a change. Prefer a small fast-growing concern in southern or midwestern locality. No boozer, married. Nominal salary to start. PW-4096, Engineering News-Record.

ESTIMATOR—31, graduate civil engineer thoroughly familiar with all phases of take-off, pricing and sub-bids, for public and institutional work. Presently employed. PW-4090, Engineering News-Record.

SANITARY ENGINEER, age 57, in excellent health, available after December first. Registered P.E. in eight states. Thirty two years successful experience in all phases of water and sewage projects, including investigations, reports, design, construction and operation. Can work with and supervise men efficiently. PW-4091, Engineering News-Record.

BUSINESS OPPORTUNITY

Interested in contacting a well established, financially responsible steel-fabricator who would be interested in manufacturing a new patent-pending automobile parking device, either contract or royalty basis; or will allow to participate financially in entire project, manufacturing, selling and distribution. An actual working model in operation. Detailed information upon inquiry, location immaterial. Contact P. J. Scott, P. O. Box 8097, Phone 5-3570 or 6-5740, Jackson, Mississippi.

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Also special rates for yearly work based on minimum jobs.
W-4077, Engineering News-Record
330 W. 42 St. New York 36, N. Y.

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Complete charge estimating dept. Commercial and industrial buildings, sewage treatment and water filtration plants. Familiar with all take-offs, pricing, sub bids. Available in six weeks. Salary $12,000 per year.
PW-3902, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

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10—15—20 Ton Overhead Traveling Cranes 40 ft. Span. Electric Operated Push Button Pendant Control. Must have complete specifications on each unit offered.
W-4009, Engineering News-Record
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INSLEY K-12, Backhoe, new Buda Motor, excellent condition, terms, reduced to $5,500.00.
RAPID PAVEMENT BREAKER, Model H., on rubber, used one job (3 months) excellent condition, cost $4,000.00. Terms, Bargain, $1,800.00.
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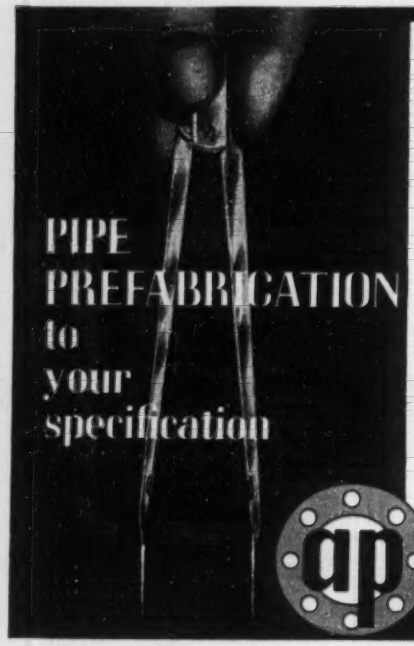

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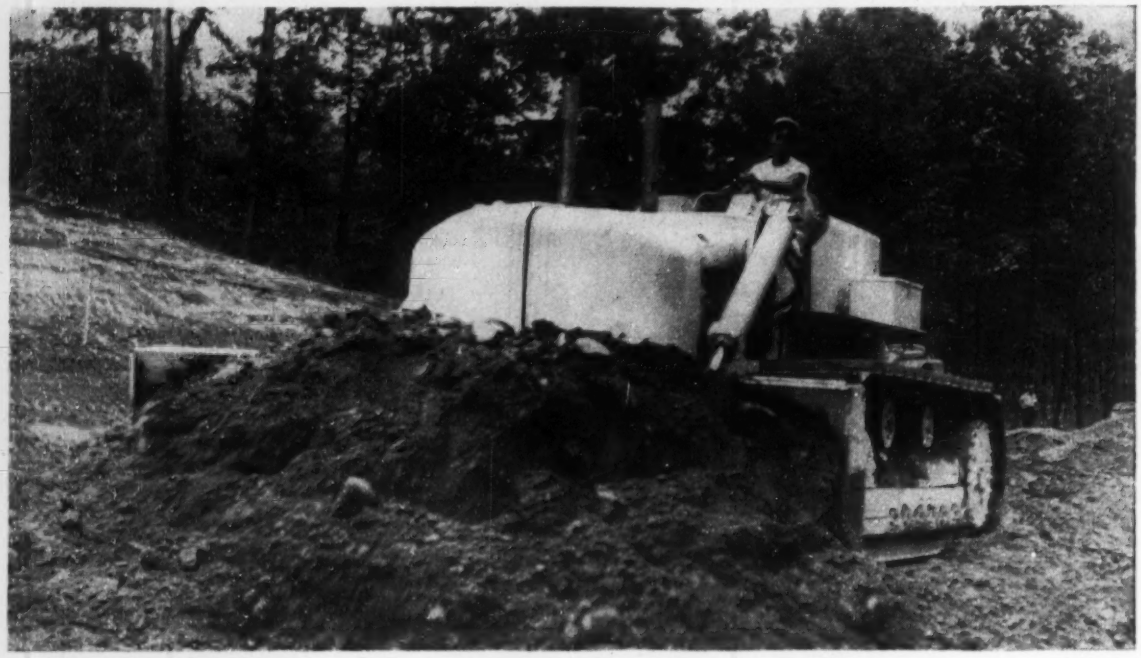


The new "Euc" crawler—big, fast and powerful

The General Motors team of Euclid, Allison and Detroit Diesel has by its combined efforts produced a crawler tractor that will, conservatively speaking, set the construction industry on its ear.

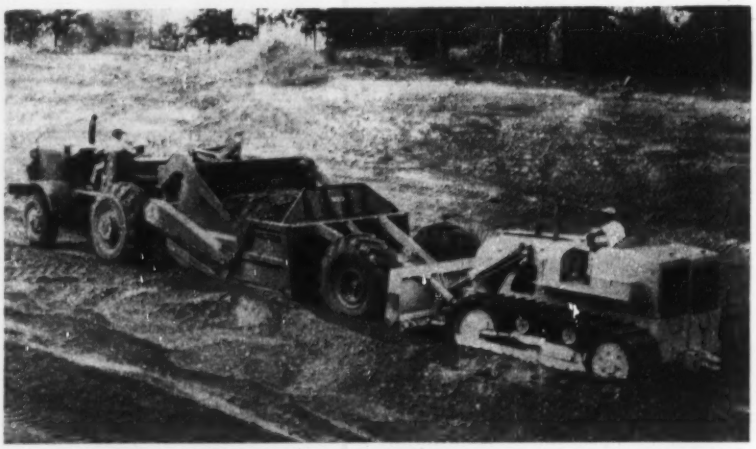
The new experimental crawler is the TC-12, a twin-engined giant that tips the scales at 53,000 lb bare and produces 380 hp, nearly twice the power of any tractor now in production. But big as it is, the new tractor has portability built in. According to Euclid, a couple of men in two hours can split the rig right down the middle into two components for hauling away on a truck-trailer.

This and the horsepower are two of the major features. It is generally known that another large experimental crawler—announced earlier this year—will be heavy on power, but Euclid feels that its split design will offer the user definite advantages in moving the rig from job to job.

The split design offers many other potential advantages however. Each of the two 190-hp. 6-cyl diesels is connected to a track through its own Allison torque converter and Torqmatic transmission. This makes the steering system a flexible one indeed. The tractor can be maneuvered by increasing or decreasing the speed of one engine for gradual, "feathered" turns; by putting one engine in neutral and applying that track brake; or by putting one engine in forward and the other in reverse. The last procedure provides a turn that would make a dervish dizzy.

By offering the operator this relatively broad selection of steering methods it is thought that cycle time can be considerably reduced. This appears to be valid, especially in view of the fact that all gear shifts are accomplished under full power. There is no master clutch and the tractor can be shifted from one speed range to another without loss of motion or be shifted into reverse while still going in the forward direction. Three speed

(*Continued on page 70*)



EXPERIMENTAL EUCLID CRAWLER designed with maximum drawbar pull at scraper loading speed. Note that the two halves of the tractor are free to oscillate.

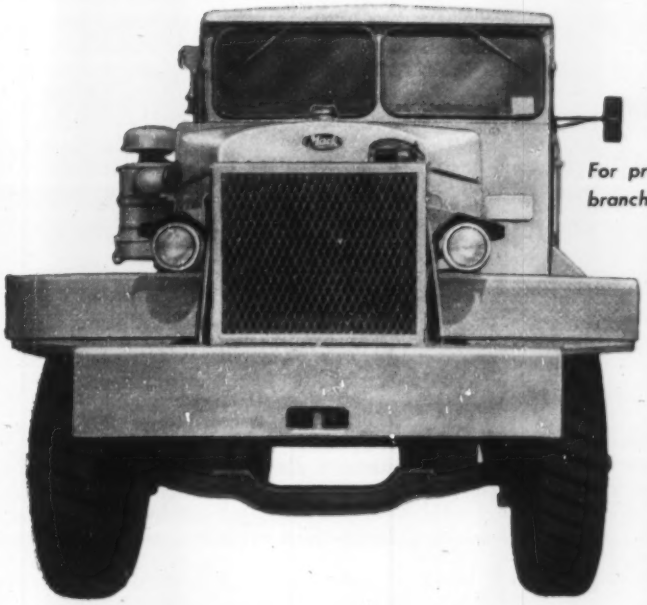
TWO NEW MACK 4-WHEEL DUMPERS

15-ton and 22½-ton payloads for earth moving and ore hauling

Here are two new Mack 4-wheel dumpers that are modified versions of famous Mack 6-wheel off-highway trucks. Simplified in design—yet with no sacrifice of brawny Mack construction—they bring BIG-MACK ADVANTAGES within the means of every large-volume hauler of earth, rock, and ore.

Here are the highlights:

	15-TON PAYLOAD MODEL LRX	22½-TON PAYLOAD MODEL LVX
ENGINE, STANDARD DIESEL OPTIONAL DIESEL	Mack Thermodyne Cummins NHB	Cummins NHBS Cummins NHRBS
CLUTCH	Mack 2-plate	Mack 2-plate
TRANSMISSION	Mack 9-speed	Mack 8-speed
TORQUE CONVERTERS	—	Allison or Schneider
REAR AXLE	Mack triple reduction with Dual Reduction carrier and Planidrive at wheels	
POWER-ASSIST STEERING	Optional	Standard
FRAME, I-BEAM, SIZE MATERIAL	12½" x 6¾" x ½" Alloy Steel	13-11/16" x 8" x 5/8" Alloy Steel



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ranges forward and three reverse are available with a top speed in both directions of 8 mph.

Euclid's long background in scrapers made the company's engineering department considerably more than simply cognizant of the requirements of a crawler in push-loading. The result is that the TC-12 develops approximately twice the drawbar pull at 2½ mph as compared with present big tractors. This loading speed matches the first gear speed of most rubber-tired scrapers for faster, fuller loading.

The two separate drive assemblies are free to oscillate on a 7-in. transverse shaft. Besides making the unit separable for shipment where weight a .d width restrictions are encountered, the two-section design also gives flexibility over uneven ground. This is said to be an aid since each track is free to maintain better contact and therefore better traction with the ground surface. A free movement of 7 in. is limited by stops welded to each frame half. A few of the experimental tractors yet to be produced will be equipped with rigid mounting for application where oscillation is undesirable.

Another factor that received heavy consideration in the design of the unit was accessibility for all components. The engines are mounted side by side and drive through universal joints and drive shafts to the torque converter located to the rear and below the operator location. The converter, transmission, reduction gearing and steering brake form one complete removable assembly. The reduction drive gears for each half of the tractor transmit power through an axle shaft to the sun pinion and the three-gear set of the Euclid planetary, located within the drive sprocket. The TC-12 can be almost completely dismantled without removal of the roller frames.

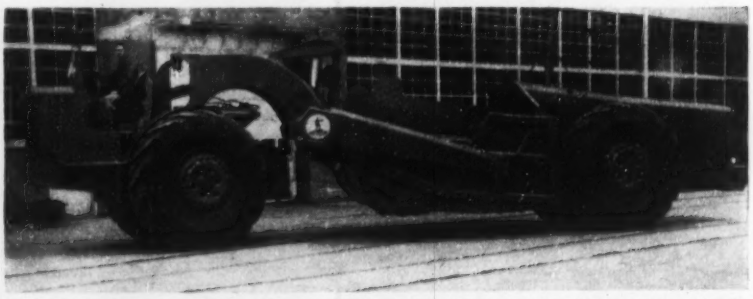
The front hood cover of each tractor is hinge-mounted to permit access to the engine. The two radiators are located at the rear to make the operator's position free of dust and heat. The radiators are hinged to rotate out of the way for access to the transmissions.

An experimental track tensioning device, based on hydraulic principles, is being tested on the machine. Two SAE standard mountings are located at the rear of each tractor half for mounting of winch and cable control units.

The Euclid TC-12 made its debut along with other Euclid products at a $75,000 press and distributor conference at the GM proving grounds near Detroit. Four tractors—the vanguard of twenty that will be tested in the near future—were displayed. Of these one was equipped with a push plate, another mounted a hydraulically-controlled 13½-ft dozer blade, another had a 17-ft 3-in. angledozer blade and the fourth a pull yoke for a Euclid loader. A full complement of additional attachments, including cable-controlled type bulldozers, is being planned.

AVAILABLE NOW is this S-7 scraper introduced at the GM proving ground along with the TC-12. Capacity of 7 cu yd is designed to make it fit small scraper market.

SOON AVAILABLE is S-18 overhung scraper which boasts a short turning radius.



EXPERIMENTAL model—a twin-powered TS-18 was also displayed at proving grounds.

The big units presage a whole new line of tractors to be built by the Euclid Division. Three smaller sizes are planned, ranging down to a C-6. This will be a single-engine tractor powered by a 190-hp GM 6-71 diesel. The other two units will be twin engined.

Since the TC-12's are still experimental and there has been no large-

scale production to date, price remains undetermined. Informed guesses however, range from a low of $30,000 to a high of $40,000 with a most-likely figure of about $37,000 for the bare tractor.

Considering the size and horsepower of the rig this estimate may appear to be low, but it should be remembered that the split design should enable the manufacturer to economize on production costs. Standard assemblies such as the GM 6-71 diesels can be used and standard production techniques can be employed.

TC-12 Specifications

Horsepower: 380—Two Detroit Diesel Model 6-71—190 HP each.
Weight: 53,000 lbs approximate bare: 65,000 lbs with bulldozer and other attachments.
Drawbar pull: Maximum drawbar pull almost equal to tractor weight with working accessories.
Travel speed: 0 to 8 miles per hour, with three speeds.
Starting method: Electrical.
Track:
Number of shoes (each side) 39
Width (standard) . . . . . 26 in.
Height of grouser . . . . . 2⅞ in.
Length (on ground) . . . . . 115⅝ in.
Area ground contact . . . . 6000 sq. in.
Transmission: Two Allison Torqmatic Drives, CRT-5530.
Steering: With engines, transmissions and brakes.
Clutch: None required.
General dimensions:
Length (overall) . . . . . 15 ft.
Width (overall) . . . . . 11 ft. 4 in.
Height (exclusive of the exhaust stacks) . . . . . 8 ft.
Ground pressure (bare) . . . . . 8½ lbs per sq. in.

The other products displayed at the proving grounds included an S-7 scraper—a 7-cu yd (struck) overhung engine unit.

The S-7, designed to fit the small self-propelled scraper market, is powered by a 138-hp GM diesel. Full 90-deg hydraulic steering permits the unit to make non-stop turns in 26 ft. Other major features are 18:00 x 25 tires, five-speed transmission, three independently operated scraper controls and a four-section interchangeable, reversible cutting edge. Planetary gears are at the outside of the drive gears wheels and all intermediate drive components are reportedly readily accessible.

Thirty of these scrapers have been manufactured and are currently entering field service in the U. S.

A second new scraper introduced at the preview was the S-18—an 18-cu yd overhung machine.

A 300 HP GM engine series 6-110 is used in conjunction with an Allison Torqmatic Converter and Transmission. This power train eliminates clutching and allows the operator to shift under full power at all times.

27:00 x 33 tires are used to afford flotation and a No-Spin differential directs the full torque to the drive wheel having the best traction.

As a further twin power development, Euclid unveiled an experimental overhung engine twin power scraper—the TS-18.

The TS-18 features two 190 HP GM diesel engines—one in the tractor and the other located behind the scraper bowl driving the rear wheels. These engines drive through Allison Torqmatic converters and transmissions to supply power to the four drive wheels. All tires are 27:00 x 33. In addition to the 4-wheel drive principle, additional traction is gained through No-Spin differentials in both the scraper and tractor drive axles.

The bowl is 18 cubic yards struck measure. All three scraper operations of bowl lift, apron and ejector are hydraulically controlled independently of each other. Full 90-deg steer allows this large scraper to make full turn in 35 ft. EUCLID DIVISION, GENERAL MOTORS CORPORATION, CLEVELAND 17, OHIO.

S-7 Specifications

Weights:
Net weight—no load . . . . . 25,000 lbs
Distribution
Drive axle . . . . . 17,000 lbs
Scraper axle . . . . . 8,000 lbs
Payload . . . . . 21,000 lbs
Gross weight with payload . . 46,000 lbs

Dimensions:
Wheelbase:
Drive to scraper axle . . . 17 ft-7 in.
Exhaust stack to ground . . . . 8 ft-0 in.
Max. dumping angle of ejector . 70 deg
Max. apron opening . . . . . 51 in.
Max. width—cutting edge . 6 ft-9¾ in.
Max. height—cutting edge above ground . . . . . 1 ft-7¾ in.
Complete OA length . . . 28 ft-10½ in.
Overall width . . . . . 8 ft-0 in.
Bowl length—open top . . . . . 7 ft-5 in.
Bowl width—open top . . . . 6 ft-10 in.
Bowl depth—open top . . . . . 4 ft-3 in.
Drive axle crearance . . . . . 1 ft-9 in.
Width required for non-stop 180 deg turn . . . . . 26 ft-0 in.

Performance:

Transmission Gear	Speeds MPH @ 2100 RPM	% Grade Empty	% Grade Loaded
1st	2.7	41.2	31.9
2nd	5.1	31.5	16.2
3rd	9.9	15.1	7.3
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EDITORIALS

More winter construction

OUR NEIGHBORS north of the border are taking a fresh look at winter construction. Despite all that had been done in the past to encourage such seasonal work, no major change has occurred in the percent of construction workers out of employment during the winter months as compared to the summer peak.

According to Raymond Brunet, president of the Canadian Construction Association, the trouble does not arise from a decline in winter construction, but from increases in summer work. So, in an attempt to improve the balance, some new steps have been taken. For one, the Minister of Labor has decided to time federal public works to provide more winter jobs. For another, the Canadian Manufacturers' Association has appointed a committee to see what can be done to get association members to step up industrial building during times of low employment.

An important aspect of this movement in Canada is an appeal to architects and engineers to support the program by better scheduling of construction projects under their control.

Because of the severe winter climate in most of Canada, there are types of construction that cannot be done economically in winter. But there are others that can. For example, all the work inside a new building can be done during the winter if the shell can be enclosed before freezing weather sets in. And experience has shown that temporary enclosures can be used to advantage on other types of construction. Winter concreting is a regular practice of the Ontario Hydro Commission on its big dams and power plants.

Whatever is possible in Canada is equally possible in the U.S. Our own seasonal pattern of construction employment is not of the best—there is still too much focus on a Spring date for start of construction. A little more speed in design work would permit more Fall starts on jobs that could be handled almost as well in cold weather as any other time.

Are present tower loadings safe?

FAILURE of several high TV towers during the recent hurricanes in the Northeast points up the importance of adequate design for these structures. As higher and higher towers are built, the area of possible damage to surrounding property, if a tower should fall, increases rapidly. Hence, a restudy of existing design criteria to determine whether deficiencies exist and if so, to correct them, appears advisable.

These structures differ from ordinary buildings in that the dead weight is low compared to live load. And with live load a high percentage of the total design load, a relatively small underestimate of the possible live load can lead to disaster.

For towers, the live load is particularly difficult to estimate because it is due mainly to wind, which is uncertain in both magnitude and direction. Furthermore, gusts may exert pulsating forces that can cause failure by building up strains.

Due to the possibility of high winds occurring in almost any part of the country, it would be wise if an investigation were made of design loadings specified in national standards for tower design, such as those of the Radio and Television Manufacturers Assn. Answers are badly needed to these questions: Are design wind pressures in line with pressures that past experience indicates are highly probable? Is it safe to assume constant wind velocity, and hence constant pressure? Should more consideration be given to the effect of gusts, especially on a tower made to vibrate by the wind?

In brief, are present safety factors adequate? If not they should be increased to remove the possibility of a collapse with consequences much more serious than resulted in the recent hurricane.

Unwelcome neighbors

FEW CHANGES are ever made without encountering some opposition. And changes—of the physical kind at least—usually involve construction. The consequence is that overcoming opposition to his projects has become one of the basic tasks of the engineer—not infrequently encompassing a responsibility of a high order to the community or the nation.

For example, many construction projects, whose necessity is unquestioned and whose location and character seem right and reasonable to their proponents, are initially opposed as unwelcome neighbors. Dams and reservoirs are notable examples. So are new highway locations and many big bridges. Slum clearance frequently encounters opposition, and no one seems to want a sewage plant or an incinerator in his immediate vicinity. Yet these facilities must be built, and it is the engineer's job to help reduce the opposition to such proportions that they can be built without damaging delay.

These thoughts are engendered by the current opposition to the installation of the Nike guided missile launching stations at sites chosen by the Defense Department to afford anti-aircraft protection to 35 critical defense areas. It is argued that they will depress real estate values and create noise, without regard to what an enemy bomber might do in these same respects.

Here, as is the more familiar cases of reservoirs, roads and incinerators, engineers might well assume some of the responsibility for removing this opposition with such tools of reason and education as they can muster. Far from being an unwelcome neighbor, a Nike installation should be seen as a most useful addition to a community's facilities.

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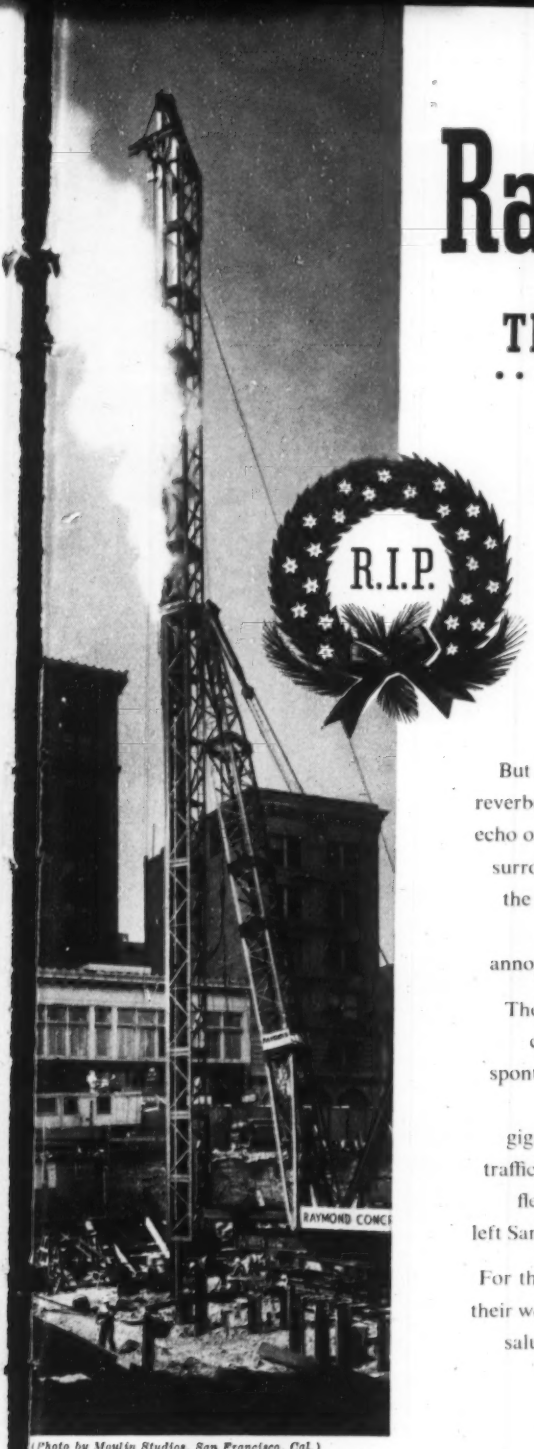

(Photo by Moulin Studios, San Francisco, Cal.)

THIS IS ALFRED THE MONSTER . . . one of the heaviest pile hammers ever built. It has a 17,500-lb. ram developing more than 58,000 ft.-lb. of energy and was used to drive 460 H-piles, averaging 130 feet in length, to support a 25-story office building for Equitable Life Assurance Society's new San Francisco office.

But the noise! No one could predict the reverberations Alfred would cause as the echo of its heavy hammer bounced off the surrounding buildings. For four months the people of downtown San Francisco lived with Alfred . . . at first with annoyance, later with amused tolerance.

Then, on the day the piledriving was completed, 10,000 happy mourners spontaneously gathered to celebrate the departure of Alfred. As this gigantic piledriver was carted away, traffic stopped, bands played, ticker tape flew, speeches were made and Alfred left San Francisco—in a blaze of notoriety.

For their long-suffering patience . . . and their wonderful sense of humor, Raymond salutes the people who saluted Alfred.

(Photo by San Francisco Chronicle)

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